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**Final Environmental Impact Statement  
for the Closure (Withdrawal of Units) of  
Norton Air Force Base, California**

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July 1990

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**DEPARTMENT OF THE AIR FORCE  
Headquarters Military Airlift Command, Scott Air Force Base, Illinois**

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# Final Environmental Impact Statement for the Closure (Withdrawal of Units) of Norton Air Force Base, California

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July 1990

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DEPARTMENT OF THE AIR FORCE  
Headquarters Military Airlift Command, Scott Air Force Base, Illinois

## **COVER SHEET**

### **LEAD AGENCY**

Military Airlift Command (MAC), United States Air Force

### **TITLE**

Final Environmental Impact Statement (FEIS) for the Closure (Withdrawal of Units) of Norton Air Force Base, California

### **CONTACT**

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### **DESIGNATION**

Final Environmental Impact Statement (FEIS).

### **ABSTRACT**

The action for this FEIS consists of withdrawal of various organizational units from Norton AFB and their relocation primarily to March AFB. Other units would be relocated to McChord, Kirtland, Travis, Luke, Los Angeles, and McClellan AFBs. The relocation actions will include transfers of personnel, aircraft, and various other equipment and material.

This FEIS assesses the environmental impacts associated with the action. The substantive areas of potential environmental impact that are analyzed are air quality, water resources, earth resources, biotic resources, cultural and historic resources, noise, hazardous waste, accident potential zones, and socioeconomics. This FEIS describes the baseline conditions, potential environmental impacts (beneficial and adverse), and possible mitigations of adverse impacts. The Base Closure and Realignment Act specifically exempts this FEIS from considering the need, purpose, or reasons for the withdrawal or alternatives for closure or realignment.

## SUMMARY

This environmental impact statement (EIS) analyzes the impacts of withdrawing troops and equipment from Norton Air Force Base (AFB), San Bernardino, California, for relocation to March AFB, California; McChord AFB, Washington; Kirtland AFB, New Mexico; Luke AFB, Arizona; and Travis, Los Angeles, and McClellan AFBs, California. This EIS does not consider the environmental impacts of receiving these troops, equipment, and operations at these bases listed above. Those impacts are assessed in separate environmental analyses. A second EIS will be prepared to analyze the environmental impacts of the disposal and reuse of Norton AFB.

Public input into the National Environmental Policy Act process was through a public scoping meeting, an agency scoping meeting, notice in the Federal Register, and letters soliciting comments. Issues identified for consideration were transportation (traffic congestion), air quality as it relates to automobile traffic, hazardous waste management, loss of services for retirees, threatened and endangered species, and historical structures. Issues deferred to the second (reuse) EIS include cleanup of hazardous waste, reuse of the base for other activities, air quality related to reuse, groundwater contamination, socioeconomic impacts related to closure and reuse of the base, and sewage treatment on the base. The EIS process was specifically limited by the Base Realignment and Closure Act so that alternatives to the action need not be developed or analyzed.

The primary impacts related to the withdrawal of troops and movement of equipment occur in the area of transportation, primarily between Norton AFB and March AFB (located about 20 miles away). Traffic congestion will increase slightly on area roadways and intersections, contributing to an already congested situation. Much of the transportation impact results from people commuting from the Norton AFB area to March AFB on a daily basis. It is expected that much of this commuting pattern would be for the short term as Air Force personnel living off the base are rotated out of their positions at March and new personnel locate nearer March AFB. Civilian personnel transferred from Norton to March will, on average, experience a longer commute from their residences to March. Due to the volatile housing market in the San Bernardino/Riverside area, and because nearly 80% of civilian commuters to Norton have a 10-mile or less drive to work, it is unlikely that civilian or Air Force Reserve employees will migrate closer to March in the near term. Housing for 264 family units will be retained at Norton for use by Air Force personnel at March. Commuting requirements for these personnel will continue for the long term.

Impacts of withdrawing troops and moving equipment and operations elsewhere had only negligible effects on all other environmental resources. Mitigation for transportation impacts includes organizing carpooling/vanpooling and establishing flexible working hours.

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## ACRONYMS AND ABBREVIATIONS

The following list contains most of the acronyms and abbreviations used in this report.

AAFES	Army-Air Force Exchange Service
AAVS	Aerospace Audiovisual Service
ABG	Air Base Group
AFAA	Air Force Audit Agency
AFB	Air Force Base
AFISC	Air Force Inspection and Safety Center
AFOSI	Air Force Office of Special Investigations
AFRES	Air Force Reserves
AGE	aerospace ground equipment
AICUZ	Air Installation Compatible Use Zone
App.	appendix
APZ	accident potential zone
ARAR	applicable or relevant and appropriate requirements
ATC	Air Training Command
Ave.	avenue
AVGAS	aviation gas
AVR	average vehicle ridership
AVS	Audiovisual Squadron
BASH	bird aircraft strike hazard
Bldg.	building
Blvd.	boulevard
BMO	Ballistic Missile Organization
BOS	base operating support
Btu	British thermal unit(s)
°C	degree(s) Celsius
CAAQS	California Ambient Air Quality Standards
CAC	California Administrative Code
CARB	California Air Resources Board
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
Co.	county
CO	carbon monoxide
Commission	Commission on Base Realignment and Closure
CTS	Commuter Transportation Services
dB	decibel(s)
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program

Det.	detachment
Dist.	district
DOC	U.S. Department of Commerce
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DRMO	Defense Reutilization and Marketing Office
EAC	Economic Adjustment Committee
EIS	environmental impact statement
EPCRA	Emergency Planning and Community Right-to-Know Act
EPA	U.S. Environmental Protection Agency
°F	degree(s) Fahrenheit
FAA	Federal Aviation Administration
Fac.	facility
Fig.	figure
FMS	Field Maintenance Squadron
ft	foot (feet)
ft <sup>2</sup>	square foot (feet)
ft <sup>3</sup>	cubic foot (feet)
FY	fiscal year
FWS	U.S. Fish and Wildlife Service
gal	gallons(s)
HQ	headquarters
IAG	Interagency Agreement
in.	inch(es)
IRP	Installation Restoration Program
IWTP	industrial wastewater treatment plant
Jct.	junction
L	liter(s)
lb	pound(s)
Ldn	day-night average sound level
m	meter(s)
m <sup>3</sup>	cubic meter(s)
MAC	Military Airlift Command
MAS	Military Airlift Squadron
MAW	Military Airlift Wing
mi	mile(s)
min	minute(s)
mo	month(s)
MSL	mean sea level
MWh	megawatt-hour(s)

NAAQS	National Ambient Air Quality Standards
NCO	noncommissioned officer
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NLR	noise level reduction
No.	number
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NPS	National Park Service
OEA	Office of Economic Adjustment
OHSPC plan oz	Oil and Hazardous Substance Pollution Contingency plan ounce(s)
PAA	primary aircraft authorization
Pb	lead
PCB	polychlorinated biphenyl
PM <sub>10</sub>	particulate matter with aerodynamic diameters ≤ 10 μm
ppm	part(s) per million
RCRA	Resource Conservation and Recovery Act
Rd.	road
RI/FS	Remedial Investigation/Feasibility Study
ROD	record of decision
ROG	reactive organic gases
Rte.	route
SAC	Strategic Air Command
SALC	Sacramento Air Logistics Center
SARA	Superfund Amendments and Reauthorization Act
SCAB	South Coast Air Basin
SCAG	Southern California Association of Government
SCAQMD	South Coast Air Quality Management District
SHPO	State Historic Preservation Officer
SO <sub>2</sub>	sulfur dioxide
SO <sub>4</sub>	sulfate
SPCC plan	Spill Prevention, Control, and Countermeasures plan
sq mi	square mile(s)
SSD	Space Systems Division
St.	street
SWAT	solid waste assessment test
TCE	trichloroethylene
ton(s)	short ton(s)
TRC	Technical Review Committee
TSD	treatment, storage, and disposal
TSP	total suspended particulates

USAF	United States Air Force
USC	United States Code
UST	underground storage tank
V/C	volume to capacity
µg	microgram(s)
µm	micrometer(s)

## 1 DESCRIPTION OF AND NEED FOR THE ACTION

The Defense Secretary's Commission on Base Realignment and Closure ("Commission") was chartered on May 3, 1988, by the Secretary of Defense to recommend military installations within the United States and its commonwealths, territories, and possessions for realignment and closure. Subsequently, the Base Closure and Realignment Act (Public Law 100-526, October 24, 1988) endorsed the Secretary's Commission and required the Secretary of Defense to implement its recommendations unless either he rejected them in their entirety or the Congress passed (and the President signed) a Joint Resolution disapproving the Commission's recommendations.

The primary criterion used by the Commission for identifying candidate bases was the military value of the installation. However, cost savings were also considered, as were the current and projected plans and requirements for each military service. Lastly, the Commission focused its review on military properties and their uses, not military units or organizational/administrative issues.

On December 29, 1988, the Commission recommended the realignment and closure of 145 military installations. Of this number, 86 are to be closed fully, 5 are to be closed in part, and 54 will experience a change (either an increase or decrease) as units and activities are relocated.

On January 8, 1989, the Secretary of Defense approved those recommendations and announced that the Department of Defense would implement them. The Congress did not pass a Joint Resolution disapproving the recommendations within the time allotted by the Act.

Therefore, the Act now requires the Secretary of Defense, as a matter of law, to implement those closures and realignments. Implementation must be initiated by September 30, 1991, and must be completed no later than September 30, 1995. Thus, the decision has been made to close Norton AFB.

The Base Closure and Realignment Act requires the implementing actions to conform to the provisions of the National Environmental Policy Act of 1969 (NEPA), as implemented by the President's Council on Environmental Quality (CEQ) regulations. In addition, this FEIS also follows Air Force Regulation (AFR) 19-2, which implements both NEPA and the CEQ regulations within the Air Force system. However, the Act also modified NEPA to the extent that the environmental analysis need not consider:

1. The need for closing or realigning a military installation selected for closure or realignment by the Commission,
2. The need for transferring functions to another military installation that has been selected as the receiving installation, or
3. Alternative military installations to those selected.

The action evaluated in this final environmental impact statement (FEIS) is the closure of Norton Air Force Base (AFB), California. The closure is the result of the recommendations of the Defense Secretary's Commission on Base Realignment and Closure, from legislative requirements in the Base Closure and Realignment Act (Public Law 100-526), and from U.S. Air Force plans to enhance mission readiness and national security. The closure of Norton AFB will involve the inactivation of the 63rd Military Airlift Wing (MAW) and a portion of the 445th MAW. The closure will also involve the relocation of Norton AFB's current major assets to March AFB, California; McChord AFB, Washington; and Kirtland AFB, New Mexico. Additionally, Headquarters U.S. Air Force (HQ USAF) recommended relocating selected smaller units from Norton AFB to Luke AFB, Arizona, and to Travis, McClellan, and Los Angeles AFBs in California.

Some construction and modification of several buildings will be required to retain the Ballistic Missile Organization (BMO), formerly the Ballistic Systems Division. Isolation of utilities and security controls will also be required.

Provisions of the Act preclude the examination of any alternative actions to closure. Consequently, this document will only examine alternate methods of carrying out the closure. Because the Act requires implementation of the closure/realignment, "no action" is not an alternative and is not specifically included. However, Chapter 3 presents the environmental conditions associated with the installation and its operations. These conditions serve as the baseline against which the implementation impacts are judged.

While the environmental impacts to Norton AFB caused by the departure of units are within the scope of this FEIS, the environmental impacts caused by the arrival of units at the new locations are not part of this FEIS. Those impacts are being assessed in separate NEPA documents focusing on impacts and issues at the various receiving bases.

A second environmental impact statement (EIS) will be prepared to cover the final disposition of the base property (including potential reuse). Reuse involves laws and community issues quite different from the comparatively straightforward steps involved in closure (i.e., halting operations and removing equipment and personnel).

On January 29, 1990, the Secretary of Defense announced the inactivation of the 63rd MAW and portions of the 445th MAW (Associate Reserve Wing). This decision was based on fiscal constraints and force structure cuts resulting from the Defense Management Review.

## 1.1 LOCATION OF THE ACTION

Norton AFB is located in southern California in San Bernardino County, about 55 miles east of Los Angeles and 60 miles west of Palm Springs (Fig. 1.1). The area surrounding the base is largely urbanized and contains the cities of San Bernardino, Highland, Redlands, Loma Linda, and Colton (Figs. 1.2 and 1.3). The base comprises 2,003 acres of contiguous property, with the Santa Ana Wash forming the southern boundary (Fig. 1.4). The Air Force also owns two noncontiguous annexes to the base within one mile of its boundary: (1) a small 3-acre parcel southwest of the base used as a

navigational marker and (2) a 30-acre parcel northeast of the base, previously used as a transmitter site and now vacant and classified as excess property.

Norton AFB, under the host command of the 63rd MAW, is one of six Military Airlift Command (MAC) strategic airlift bases that provide airlift for troops and military cargo. In an effort to improve airlift services at a reduced cost, HQ MAC has defined a revised network of selected aerial ports and efficient aircraft routings. As a result, Norton AFB is no longer required to meet peacetime or wartime requirements. Travis AFB has been identified as the primary West Coast aerial port.

Norton AFB is home to numerous tenant units, including those listed in Table 1.1 (page 1-7); App. A provides more detailed descriptions of major tenant organizations and their missions. Many of the tenants support the airlift mission, others provide support to larger tenants (such as the Air Force Inspection and Safety Center [AFISC] and 1352nd Audiovisual Squadron [AVS]), and several are independent of other missions at Norton AFB. The relocation of most of the tenants to March AFB allows the consolidation of many small units requiring office space, thus reducing base operating costs.

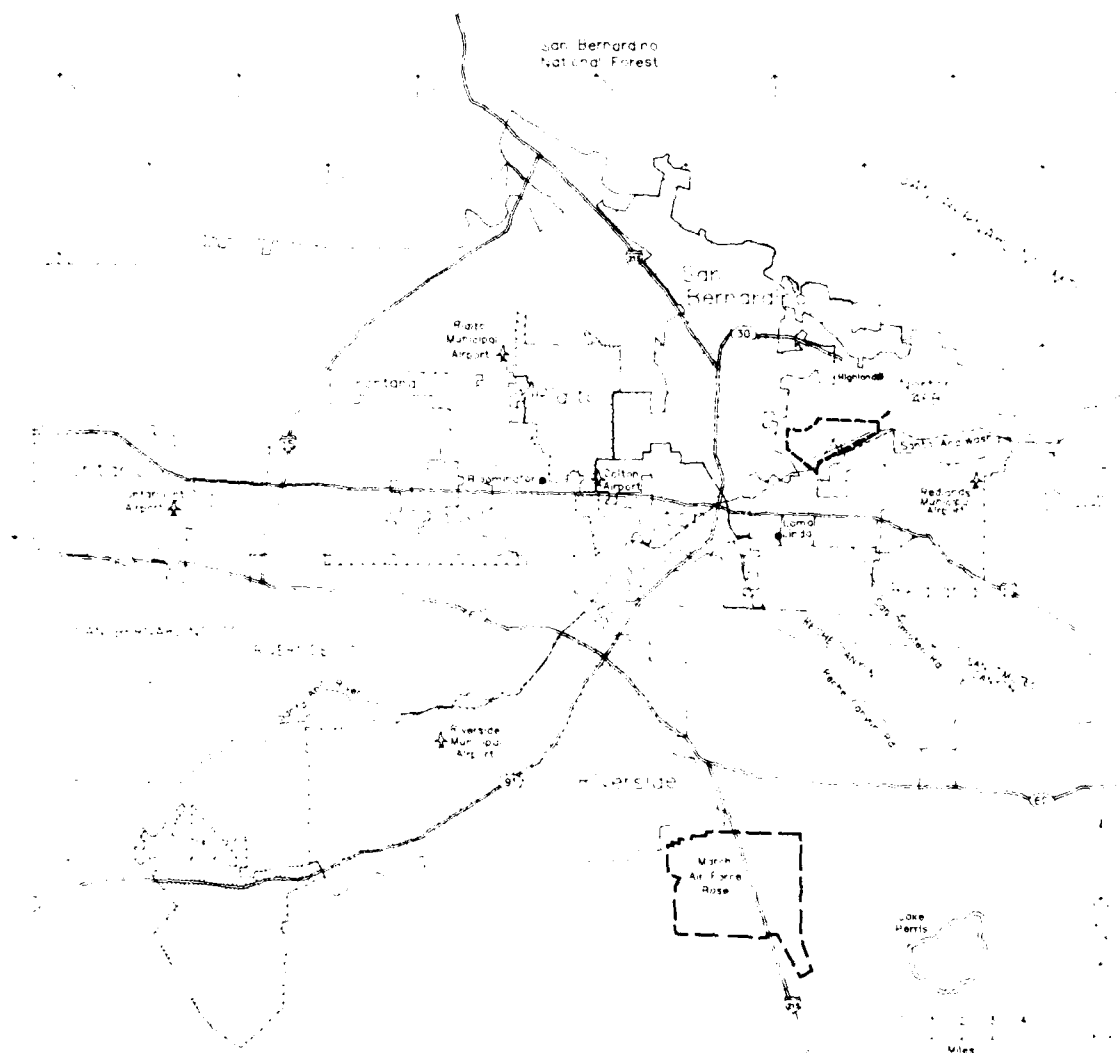
The Air Force's functional safety manager, AFISC, provides Air Force agencies an assessment of their fighting and medical readiness and their resource management effectiveness. Relocating the center from Norton AFB to Kirtland AFB allows consolidation with the AFISC Directorate of Nuclear Surety, already located at Kirtland.

## 1.2 SCOPING PROCESS AND PREPLANNING ANALYSIS

This FEIS evaluating the withdrawal of units caused by the closure of Norton AFB has unique characteristics as dictated by the Base Closure and Realignment Act. As described at the beginning of this section, that law makes exemptions to the normal process the Air Force follows to comply with NEPA (42 USC 4321 et seq.) and the CEQ regulations implementing NEPA.



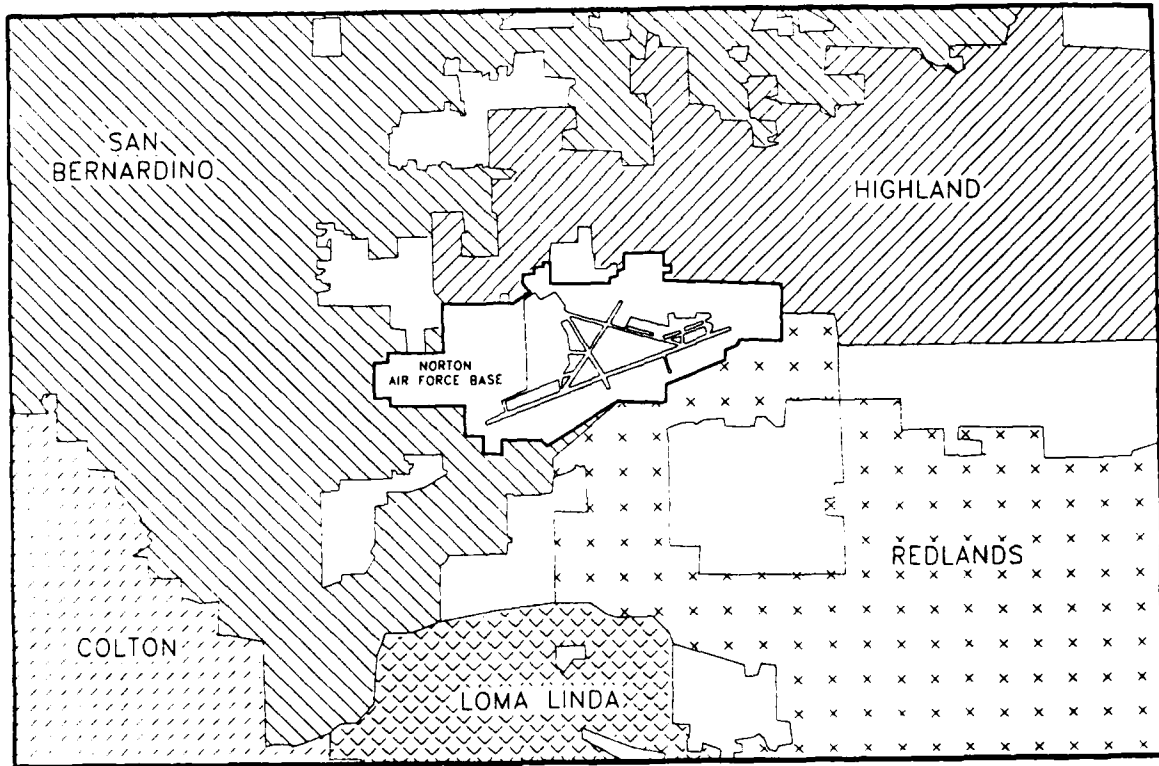
**FIGURE 1.1 General Location of Norton Air Force Base**



**FIGURE 1.2 Immediate Vicinity of Norton Air Force Base (Source: Adapted from Rand McNally 1986)**

On February 17, 1989, the Air Force published a notice of intent to prepare two EISs for the closure of Norton AFB (Federal Register, Vol. 54, No. 32, pp. 7248-7249). The notice stated that the first of the two would be a closure EIS, focusing on potential impacts associated with ceasing operations. The Air Force committed to a second EIS that would cover the final disposition and reuse of the facilities at Norton. Thus, this FEIS, the first EIS, has a limited scope and examines the impacts associated only with implementation of the withdrawal. Impacts at the receiving installations are being assessed in separate environmental assessments.

The February 17 notice of intent also announced a public scoping meeting, which was held in San Bernardino on March 8, 1989. In addition to announcing its intentions in the Federal Register, the Air Force mailed letters to relevant local, state, and federal



**FIGURE 1.3 Communities near Norton Air Force Base (Revised) (Source: Adapted from County of San Bernadino Geographic Information Management System, 1989)**

agencies; the letter indicated that a scoping meeting for agencies would be held in the morning on March 8, 1989. Written comments were also solicited from the public in regard to the base closure. The official comment period was from February 17 until April 7, 1989; however, letters received after that date were also considered in determining the scope of this FEIS.

Scoping comments focused primarily on environmental issues related to the second EIS. The primary issue centered on toxic and hazardous waste currently buried on site. The reuse of the base was brought up by several people, as was air quality related to base operation and commuting. The presence of nearby municipal wells caused some concern related to contaminated soil and groundwater. Sewage treatment on base was also indicated as an issue in reference to reuse. All of these topics will be examined in depth in the reuse EIS.

Comments related to the closure actions addressed in this FEIS dealt with some aspects of the issues discussed above and included questions or concerns about how the hazardous waste management program would be staffed during the closure activities. The adequacy of waste management plans was also brought up as an issue. The concern was expressed that, with the closure of the base, waste cleanup programs may suffer

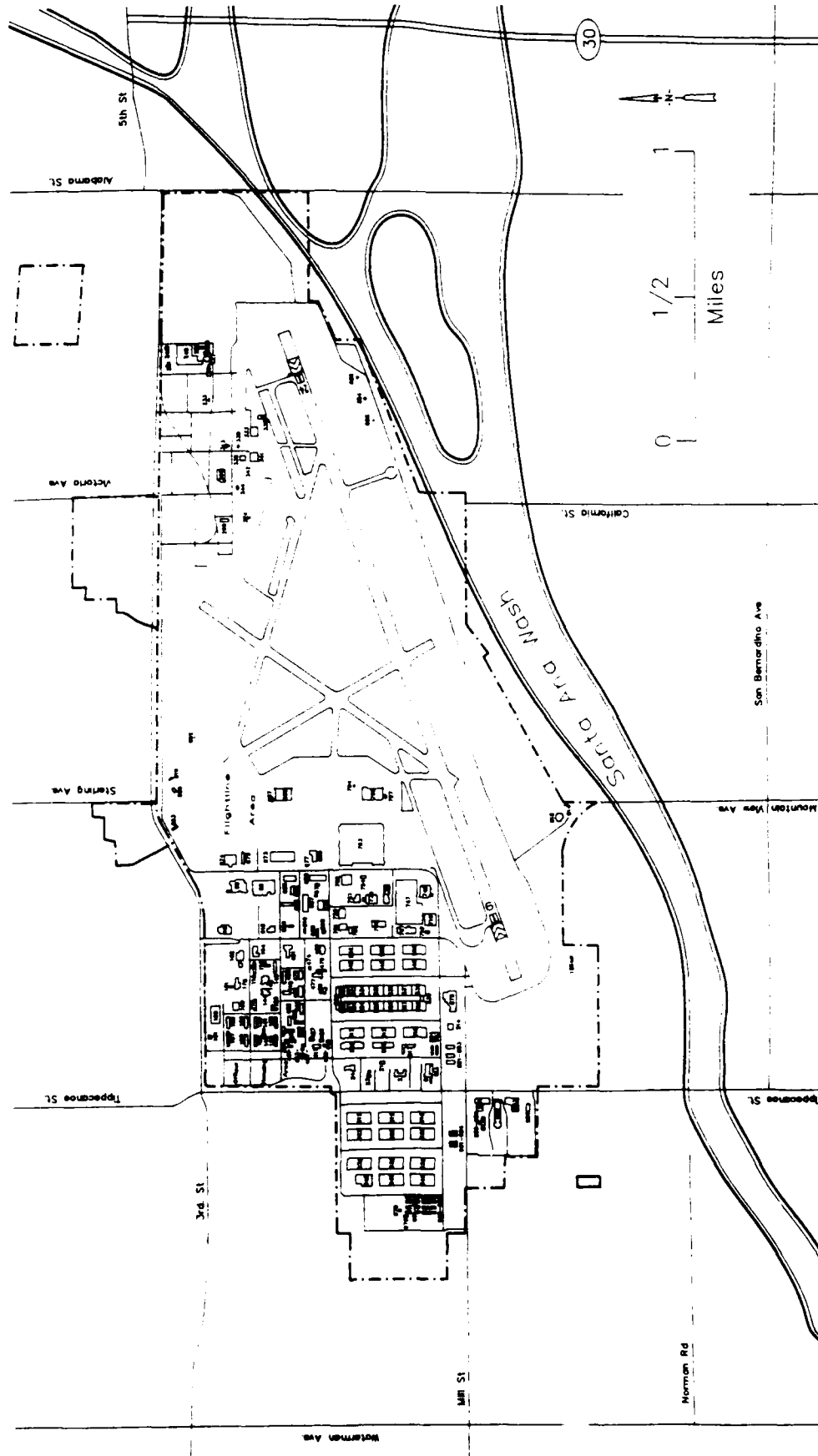


FIGURE 1.4 Site Plan for Norton Air Force Base (Source: Adapted from Norton APB 1988b)

TABLE 1.1 Partial List of DOD Tenant Organizations at Norton Air Force Base

Tenant	Abbreviation <sup>a</sup>	Projected Relocation Date (fiscal quarter)
<u>DOD Tenants</u>		
Air Force Inspection and Safety Center	AFISC	4/93
Air Force Audit Agency	AFAA	3/93
Military Airlift Command Noncommissioned Officer Academy-West	MAC NCO Academy-West	1/93
1400th Military Airlift Squadron	1400th MAS	2/91
445th Military Airlift Wing (AFRES Associate)	445th MAW	3/93
Ballistic Systems Division	BSD	NA <sup>b</sup>
22nd Air Force NCO Leadership School		3/92
Headquarters, Aerospace Audiovisual Service	HQ AAVS	2/93
1352nd Audiovisual Squadron	1352nd AVS	2/93
1965th Communications Squadron		NA
3562nd Recruiting Squadron, Air Training Command (ATC)		3/93
Detachment 505, 3754th Field Training Squadron, ATC		NA
Missile Maintenance and Storage Division		1/93
Detachment 14, 17th Weather Squadron		1/94
Air Force Office of Special Investigations, District 18	AFOSI	3/93
Detachment 10, 1600th Management Engineering Squadron		3/94
Military Air Traffic Coordination Unit		2/92
Detachment 42, Sacramento Air Logistics Center	Det. 42, SALC	4/93
Army-Air Force Exchange Service	AAFES	
Southern Calif. Area Exchange		3/91
Norton Distribution Center		4/93
Defense Reutilization and Marketing Office	DRMO	4/93
Detachment 1840, Defense Investigative Service, AFOSI		3/93
Air Force Regional Civil Engineer, BMS		NA
Army Corps of Engineers		3/94
Civil Air Patrol, Group 18		1/93
Detachment 2, Strategic Air Command Systems Office		3/93
Detachment 6, 2762nd Logistics Squadron, Air Force Logistics Command	AFLC	2/90 <sup>c</sup>
USAF Clinic Norton		4/93
Defense Contract Administrative Service		3/94
USAF Judiciary Area Defense Counsel		3/94
Air Force Commissary Service, California Regional Office		4/90
<u>Other Tenants</u>		
Norton AFB Credit Union		NA
Wells Fargo Bank		NA
American Red Cross		1/93
U.S. Bureau of Customs		1/93
U.S. Department of Agriculture		1/93

<sup>a</sup>As used in this FEIS.<sup>b</sup>Not applicable.<sup>c</sup>Deactivated.

Source: Norton AFB (1988a).

reduced funding and staffing and thereby fail to achieve compliance. Another issue was the effects on air quality from increased commuter traffic to March AFB. Also related to this was the concern that traffic would increase as people currently employed at the base sought employment in other communities. Thus, impacts on transportation and traffic patterns were identified as important during the scoping process.

Several other issues were identified during the scoping process. The issue of threatened and endangered species was brought up, and one person expressed concern over historical structures being demolished on the base. Effects of the base closure on retirees was also indicated as an issue, with the loss of medical services and the commissary highlighted as a potential problem. These issues are all addressed in this FEIS, with the exception of the effects of alternative employment opportunities on traffic congestion. This subject will be considered in the reuse EIS.

### **1.3 RELEVANT STATUTES, REGULATIONS, AND GUIDELINES**

This chapter identifies the federal permits, licenses, and other entitlements that may be required in implementing the action.

Various federal environmental statutes impose environmental protection and compliance requirements upon federal agencies, including requirements for these agencies to comply with certain state and local regulatory programs. The Air Force policy is to conduct its operations in an environmentally safe and sound manner in compliance with applicable environmental statutes, regulations, and standards.

The National Environmental Policy Act (NEPA) of 1969 (42 USC 4321 et seq.) establishes broad national environmental policy. NEPA, as amended, requires all federal agencies to prepare an EIS for proposed major federal actions significantly affecting the quality of the human environment. Accordingly, this FEIS has been prepared in compliance with the Council on Environmental Quality's regulations on implementing NEPA (40 CFR 1500-1508) and the Air Force Environmental Impact Analysis Process (EIAP), AFR 19-2.

Other federal and state major environmental legislation and regulations that may be applicable to the action are discussed in the following sections.

#### **1.3.1 Water**

##### **1.3.1.1 Clean Water Act**

The objective of the Clean Water Act (33 USC 1251 et seq., as amended) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." The act requires all branches of the federal government involved in an activity that may result in a point-source discharge or runoff of pollutants to U.S. waters to comply with applicable federal, state, interstate, and local requirements for controlling and abating water pollution to the same extent as any nongovernment entity.

In California, Title 23 of the California Administrative Code (23 CAC) regulates the use of the waters of the state and discharge of effluent into surface waters and groundwaters.

#### **1.3.1.2 Safe Drinking Water Act**

The purpose of the Safe Drinking Water Act (42 USC 300 et seq.) is to set primary drinking water standards for owners and operators of public water systems and to prevent underground injection that can contaminate drinking water sources.

The National Primary Drinking Water regulations in 40 CFR 141 define maximum contamination levels in public water systems. The U.S. Environmental Protection Agency (EPA) has delegated authority to the state of California for regulating public water supplies. In California, 22 CAC regulates drinking water supplies.

### **1.3.2 Air**

#### **1.3.2.1 Clean Air Act**

The Clean Air Act (42 USC 7401 et seq., as amended) sets national primary and secondary ambient air quality standards, requires that specific emission increases for major stationary sources and modifications to them be evaluated so as to prevent a significant deterioration in air quality, and provides authority to the EPA to set national standards for performance of new stationary sources of air pollutants and standards for emissions of hazardous air pollutants. As a result, the EPA has established several air permitting programs.

Air quality regulations in the Norton AFB area are established and administered by the South Coast Air Quality Management District.

#### **1.3.2.2 California Clean Air Act**

The California Clean Air Act of 1988 (AB 2595, effective Jan. 1, 1989) is modeled after the federal Clean Air Act. The basic requirements of the law include (1) identification of air basins within the state as nonattainment, attainment, or unclassified in meeting the state ambient air quality standards, (2) attainment plans for nonattainment pollutants and their precursors, (3) extensive vehicular emission control strategies, (4) mandatory reductions of nonattainment pollutant emissions from both vehicular and nonvehicular sources, and (5) modification of permitting and variance procedures. In general, the state ambient air quality standards are more stringent than federal standards, and state attainment plans generally require more stringent emission control strategies.

### **1.3.3 Solid and Hazardous Waste**

The management of solid and hazardous waste is regulated by the Resource Conservation and Recovery Act (RCRA), which was enacted in 1976 to amend the Solid Waste Disposal Act and was itself amended in 1984 (Hazardous and Solid Waste Amendments, 42 USC 6901-6987). RCRA provides for the protection of the public health and environment from activities associated with the use, handling, treatment, and disposal of solid and hazardous wastes. It sets forth requirements for generators and transporters of hazardous waste and also establishes a specific permit program for the treatment, storage, and disposal (TSD) of hazardous wastes.

Subpart D of RCRA provides for the development of state plans for solid waste disposal and resource recovery. The objectives of Subpart D are to assist in developing and encouraging methods for solid waste disposal that are environmentally sound, maximize the recovery of valuable resources from solid waste, and encourage resource conservation. Solid waste is defined by RCRA as (1) any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and (2) other discarded material, including solid, liquid semisolid, or contained gaseous material, resulting from industrial, commercial, mining, and agricultural operations and other community activities.

The EPA has promulgated regulations to implement RCRA Subpart C for the treatment, storage, and disposal of hazardous waste in 40 CFR 260-270. The hazardous waste regulations contain interim status standards applicable to hazardous wastes or constituents from solid waste management units at TSD facilities. For mixed wastes, which contain both hazardous waste and radioactive waste, the hazardous components are subject to RCRA regulations.

Title 23 of the CAC regulates underground storage tanks and specifies requirements for tank closure. State regulations are administered by San Bernardino County. Hazardous wastes within the state are regulated under 22 CAC 4, Chapter 30.

### **1.3.4 Environmental Response**

#### **1.3.4.1 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**

CERCLA (42 USC 9601 et seq., as amended) provides for funding, enforcement authority, cleanup, and emergency-response authority for releases of hazardous substances into the environment. Under CERCLA, releases of hazardous substances into the environment (as defined) must be reported.

Superfund Amendments and Reauthorization Act of 1986 (SARA) reauthorizes CERCLA and establishes a variety of requirements relating to the level of cleanup for remedial actions. SARA also establishes directives for selecting permanent remedies, meeting state requirements, and establishing the role of the state in the cleanup process.

#### **1.3.4.2 Emergency Planning and Community Right to Know Act of 1986 (EPCRA)**

EPCRA (42 USC 11001 et seq.) establishes requirements for emergency planning, spill reporting, and inventory reporting for specified classes of hazardous substances at commercial facilities or workplaces with an inventory of toxic or hazardous chemicals. The act requires state and local emergency-planning committees to be established to prepare plans to respond to releases of "extremely hazardous substances" listed by the EPA. Owners and operators of facilities must immediately notify the local and state committees of releases beyond facility boundaries of reportable quantities (initially set at one pound) of substances reportable under CERCLA Section 103(a).

#### **1.3.5 Cultural Resources**

Historical and cultural resources are protected under the National Historic Preservation Act (16 USC 470 a-470w-6); Executive Order 11593, Protection and Enhancement of the Cultural Environment; Archaeological and Historic Preservation Act (16 USC 469-469e); and Historic Sites Act (16 USC 461-467). Pursuant to these acts and the executive order, federal agencies must provide an opportunity as appropriate for comment and consultation with the appropriate State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation when an action has the potential to affect historic or cultural sites.

#### **1.3.6 Endangered Species Act**

The Endangered Species Act (16 USC 1531-1543) establishes a federal policy to conserve endangered or threatened species of fish, wildlife, and plants. Federal agencies must determine whether any listed or proposed endangered or threatened species or their habitats would be affected by project activities. If a listed species or critical/proposed-critical habitat may be affected by the project, the agency must consult with the Regional Director of the U.S. Fish and Wildlife Service (FWS) and follow FWS procedures.

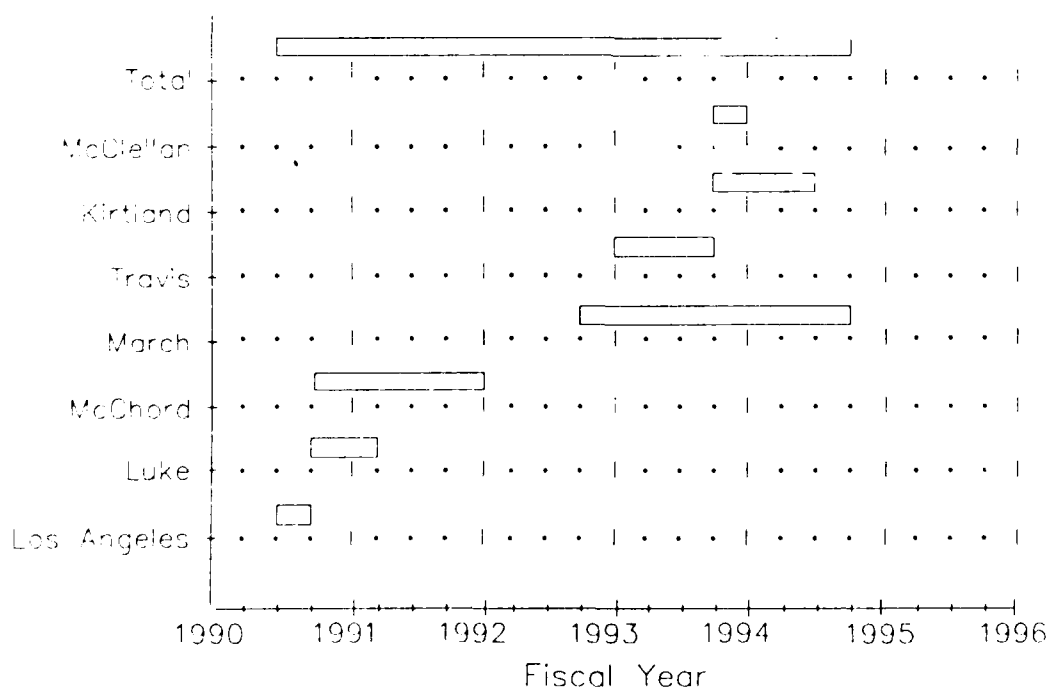
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## 2 THE ACTION

In this section, the action, withdrawal of personnel, and closure of the base are described in sufficient detail to allow environmental impacts to be assessed. Provisions of the Base Closure and Realignment Act preclude the examination of any alternative actions to closure of the base. The Act requires implementation of the closure; therefore, the "no-action" alternative is not discussed.

The action is implementation of the decision of the Secretary of Defense, upon recommendation by the Commission on Base Realignment and Closure, to close Norton AFB. It consists of the inactivation of the 63rd MAW and a portion of the 445th MAW, as well as the withdrawal of various organizational units from Norton AFB and their relocation primarily to March AFB. Other units at Norton AFB would be relocated to McChord, Kirtland, Travis, Luke, McClellan, and Los Angeles AFBs. The relocation actions would include transfers of personnel, aircraft, and various other equipment and material. The potential impacts of relocation at these other bases -- new construction, modifications to facilities, changes in waste-generating activities, etc. -- are not addressed in this EIS but are being assessed in separate NEPA documents. Figure 2.1 provides an overview of the planned schedule for the action. The personnel transfers are listed in Tables 2.1 and 2.2 and summarized in Table 2.3.



**FIGURE 2.1 Schedule Summary for Relocations from Norton AFB Showing Closure of Norton by FY 94/3 (Revised) (Source: USAF/MAC 1989)**

**TABLE 2.1 Preliminary Estimate of Full-Time Personnel Affected by the Relocation to March AFB**

Unit	Personnel		
	Military	Civilian	Total
445th MAW (AFRES assoc.)	34	245	279
AF Audit Agency	51	142	193
AFOSI, Dist. 18	37	10	47
1400th MAS	30	2	32
1352nd AVS and HQ AAVS	116	137	253
3562nd USAF Recruiting Squadron	18	2	20
Other tenants	5	0	5
Base operating support	<u>188</u>	<u>45</u>	<u>233</u>
All units	479	583	1,062

Source: USAF/MAC (1989).

**TABLE 2.2 Preliminary Estimate of Full-Time Personnel Affected by the Relocation to McChord AFB**

Unit	Personnel		
	Military	Civilian	Total
Active Duty	518	10	528
AFRES technicians	0	70	70
Base operating support	<u>50</u>	<u>19</u>	<u>69</u>
All units	568	99	667

Source: USAF/MAC (1989).

**TABLE 2.3 Summary of Estimated Full-Time Personnel Dispositions  
Resulting from the Action**

Disposition	Military	Civilian	Total
Appropriated Fund Personnel			
To March AFB	479	583 <sup>a</sup>	1,062
To McChord AFB	568	99	667
To Kirtland AFB	355	137	492
To Luke AFB	0	4	4
To Los Angeles AFB	9	0	9
To Travis AFB	56	6	62
To McClellan AFB	86	88	174
Retained at Norton AFB <sup>a</sup>	541	479	1,020
Manpower reductions	<u>2,968</u>	<u>1,394</u>	<u>4,362</u>
Current total, Norton AFB	5,062	2,790	7,852
Nonappropriated Fund Personnel <sup>b</sup>			
Morale, Welfare, Recreation (nonappropriated fund employees)			350
Base Exchange employees			300
Warehouse employees			65
Contractor Personnel Working on Norton AFB <sup>c</sup>			
Contractors and subcontractors - Ballistic Missile Organization			1,302
Contractors - Aerospace Audiovisual Service			132
Miscellaneous contractors			200

<sup>a</sup>Of this number, 243 are AFRES technicians.

<sup>b</sup>The jobs identified above are expected to be cut. How many of these people will attempt to find and be given jobs at March AFB is unknown.

<sup>c</sup>There is no change expected for the contractors for BMO since this organization will remain at Norton AFB. Of the remaining contractors, some may move to March, some may remain at Norton, and other contracts may be canceled.

Sources: USAF/MAC (1989) for appropriated fund personnel; 63rd MAW/CC-CARE (1989) for nonappropriated fund and contractor personnel.

Currently, Norton AFB's primary aircraft authorization (PAA), which would be retired or relocated, includes 56 cargo and operational support aircraft: 48 C-141Bs, 4 C-12Fs, and 4 C-21As. Twenty of Norton's C-141s will be placed in backup aircraft inventory (BAI) status or retired. Sixteen PAA C-141s will be relocated to March AFB with the 445th MAW (AFRES). The 4 C-12Fs and 4 C-21As will also be relocated to March AFB. McChord AFB would receive one squadron complement of 12 C-141Bs and the associated active duty and Air Force Reserve (AFRES) associate manpower. Norton closure plans call for the BMO to remain at Norton AFB. The BMO and associated units employ about 675 military and 585 civilian personnel. As a Defense management review initiative to streamline activities, the BMO recently became part of the Space Systems Division (SSD) located at Los Angeles AFB. A separate EIS is being prepared to analyze the move of SSD due to the proposed closure of Los Angeles AFB. Possible relocation of BMO, along with SSD, is being evaluated in the SSD EIS.

The construction program required to retain the BMO includes interior modification of the former AFISC facility (Building 918) and the possible rehabilitation of two warehouses. New exterior doors, fencing, and gates will be required for security control, and utilities will be isolated from the remainder of the installation. Approximately \$9.7 million will be required for this construction.

Additionally, in order to reduce the shortage of family housing in the local area, Norton AFB military family housing will be retained as satellite housing for use by personnel assigned to March AFB. Norton AFB housing includes 264 existing family units.

The Air Force prepared an environmental assessment to consider the interim joint use of part of Hangar 763 on Norton AFB by Lockheed Corporation, sublessee to the Inland Valley Development Agency. Lockheed proposes to conduct commercial maintenance on Boeing 747 aircraft, similar to the type of maintenance conducted by the Air Force on C-141 aircraft at Norton AFB. Lockheed would use bays 3 and 4 of the hangar to accommodate establishment of a commercial maintenance and modification center specializing in 747 aircraft. Lockheed will modify the bays to include new fire walls, a fire protection system, draft curtains, a fire detection and alarm system, modifications to utilities, cleaning/rejointing, and trenching of floor slabs. After Norton AFB closes, Lockheed will continue operations in accordance with the lease. Impacts of this action are addressed in the environmental assessment that is reprinted in this FEIS as Appendix G. Such impacts are not addressed further in this FEIS.

**TABLE 2.4 Aircraft to Be Relocated to March AFB**

Air-craft	Norton PAA	Approx. Annual Flying Hours
C-141B	16	18,300
C-21A	4	2,700
C-12F	4	2,700

Source: USAF/MAC (1989).

## 2.1 RELOCATION TO MARCH AFB, CALIFORNIA

The action includes the relocation of the following units from Norton to March AFB:

- 445th MAW (AFRES), minus reductions in base operating support (BOS) staff and personnel transferred to McChord AFB (see Section 2.1.2)
- HQ Air Force Audit Agency (AFAA), including detachments
- Air Force Office of Special Investigation (AFOSI), District 18
- 1400th Military Airlift Squadron (MAS)
- 3562nd USAF Recruiting Squadron
- AAVS
- 1352nd AVS
- About 11 smaller support and nonassociated tenant units

The relocation includes the personnel listed in Table 2.1 and the aircraft listed in Table 2.4.

The basic mission of the relocated units will remain unchanged. These moves would enhance command and control and reduce cost of operations.

Since the Strategic Air Command (SAC) will remain the host command at March AFB, appropriate BOS personnel authorizations will be transferred from MAC to SAC (including medical personnel). Those Norton AFB support units with counterparts at March AFB (i.e., weather, field training, and communications) will be deactivated as appropriate, and available authorizations will be used to increase the March AFB units to the required strength.

Transfer of the C-141 wing (aircraft and personnel) to March AFB will begin in the third quarter of fiscal year 1993 (FY93). Transfer of other units to March AFB will begin in the first quarter of FY93.

## 2.2 RELOCATION TO MCCHORD AFB, WASHINGTON

The action includes the relocation of one squadron complement of aircraft (12 PAA C-141s) of the 63rd MAW and of the 445th MAW (AFRES associate), and associated flying, maintenance, and other support personnel from Norton AFB to McChord AFB. The active duty personnel would be assigned to the 62nd MAW and the reserve personnel would become part of the 446th MAW (AFRES associate). This move would enhance command and control and reduce operations cost. The 22nd Air Force

Noncommissioned Officer (NCO) Leadership School will also relocate to McChord AFB, as well as a portion of the Air Force Commissary Service's California Regional Office. The responsibility for the northern California bases will go to the Commissary Service's Northwest Regional Office at McChord AFB.

Implementation of this action requires the transfer of personnel authorizations. The estimates of affected full-time authorizations are given in Table 2.2. An additional 405 part-time (reserve drill) personnel authorizations would also be transferred, as well as about 7 personnel from the Air Force Commissary Service.

The basic mission of the units relocated to McChord AFB will remain unchanged.

| Aircraft and personnel transfer to McChord AFB will begin about the fourth quarter of FY90 (see Fig. 2.1).

### **2.3 RELOCATION TO KIRTLAND AFB, NEW MEXICO**

The action includes the relocation of the Air Force Inspection and Safety Center from Norton AFB to Kirtland AFB. This will collocate the AFISC Directorate of Nuclear Surety, currently at Kirtland AFB, with the rest of the center and allow for consolidation of some functions. No aircraft or missile force structure is involved in the action. The basic mission of the affected units and Kirtland AFB would remain unchanged.

| Implementation of this action requires the transfer of personnel authorizations, including about 355 full-time military and 137 civilian personnel, and the moving or disposal of office, shop, and stored materials.

| Personnel transfers to Kirtland AFB will begin by the fourth quarter of FY93 (see Fig. 2.1).

### **2.4 RELOCATION TO TRAVIS AFB, CALIFORNIA**

The action includes the relocation of the 1380th School Squadron (MAC NCO Academy-West) from Norton AFB to Travis AFB. No aircraft or missile force structure is involved in the action. The basic mission of the affected unit and Travis AFB would remain unchanged.

| Implementation of this action requires the transfer of personnel authorizations, including about 62 full-time military and civilian personnel and 135 temporary duty students per class (seven classes per year).

| Personnel transfers to Travis AFB will begin by the first quarter of FY93 (see Fig. 2.1).

## **2.5 RELOCATION TO MCCLELLAN AFB, CALIFORNIA**

The action includes the relocation of Detachment 42 of the Sacramento Air Logistics Center (SALC) from Norton AFB to McClellan AFB. No aircraft or missile force structure is involved in the action. The basic mission of the affected units and McClellan AFB would remain unchanged.

Implementation of this action requires the transfer of personnel authorizations, including about 174 full-time military and civilian personnel, and the moving or disposal of office, dormitory, shop, and stored materials.

Personnel transfers to McClellan AFB will begin by the fourth quarter of FY93 (see Fig. 2.1).

## **2.6 RELOCATION TO LUKE AFB, ARIZONA**

The Air Force Commissary Service's California Regional Office will split its responsibilities between Luke and McChord AFBs. Responsibilities for seven bases, including March AFB, will go to the Southwest Regional Office at Luke AFB. Implementation of the action requires the transfer of about 4 personnel.

Personnel transfers to Luke AFB will begin by the fourth quarter of FY90.

## **2.7 RELOCATION TO LOS ANGELES AFB, CALIFORNIA**

The Defense Courier Service Office has relocated from Norton AFB to Los Angeles AFB. Implementation of this action requires the transfer of 9 military personnel authorizations. Personnel transfers to Los Angeles AFB began the third quarter of FY90. A separate NEPA document was prepared for this action, and this EIS evaluates the cumulative effects (USAF/MAC 1990).

## **2.8 SUMMARY OF ENVIRONMENTAL IMPACTS OF THE ACTION**

The primary impacts related to the withdrawal of troops and movement of equipment occur in the area of transportation, primarily between Norton AFB and March AFB (located about 20 miles away). Traffic congestion will increase slightly on area roadways and intersections, contributing to an already congested situation. Much of the transportation impact results from people commuting from the Norton AFB area to March AFB on a daily basis. It is expected that much of this commuting pattern would be for the short term as Air Force personnel living off the base are rotated out of their positions at March and new personnel locate nearer March AFB. Civilian personnel transferred from Norton to March will, on average, experience a longer commute from their residences to March. Due to the volatile housing market in the San Bernardino/Riverside area, and because nearly 80% of civilian commuters to Norton have a 10-mile or less drive to work, it is unlikely that civilian or Air Force Reserve employees will migrate closer to March in the near term. Housing for 264 family units

| will be retained at Norton for use by Air Force personnel at March. Commuting  
| requirements for these personnel will continue for the long term.

|       Impacts from withdrawing troops and moving equipment and operations  
| elsewhere will have only negligible effects on all other environmental resources.

### 3 AFFECTED ENVIRONMENT

This chapter provides a description of the existing environment that is potentially affected by the action. A brief description of the climate and topography of the region (Section 3.1) is followed by a characterization of the existing physical environment in terms of soil and groundwater contamination by previous activities, on-base underground storage tanks, air quality and emission sources in the area, and surface water and groundwater resources (Section 3.2). Section 3.3 describes biological resources in the area and identifies on-base vegetation and wildlife as well as threatened and endangered species that occur or may occur on base. Section 3.4 on the human environment includes descriptions of archaeological, cultural, and historic resources; the current impact of Norton airfield activities on noise levels and land use and building height restrictions; current generation and use of hazardous materials on base; and various socioeconomic factors, including the regional economic profile, public utilities used by the base, transportation conditions, recreational resources provided by the base, use of the base by military retirees, and other land use factors.

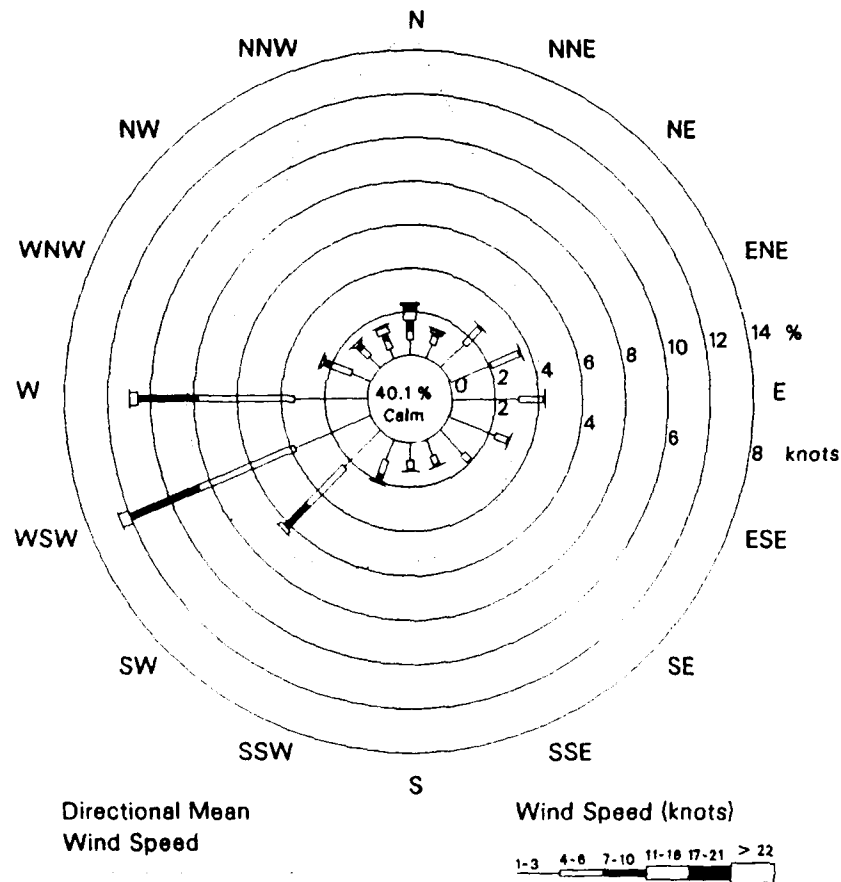
#### 3.1 GENERAL DESCRIPTION OF THE INSTALLATION AREA

##### 3.1.1 Climate

The climate of the San Bernardino Valley is characterized by hot summers, moderate winters, light annual rainfall, generally light to moderate winds, and comfortable humidities. The climate is significantly affected by the valley's spatial relationship to the ocean to the west and southwest, the mountains to the north, and desert to the east. The following discussion of meteorology in the study area is based on observations at the Norton AFB weather observation site. The period of record for hourly data is 1976-1985, and that for daily data is 1943-1985, unless noted otherwise.

Prevailing surface winds at the base are from the west-southwest and west (see the wind rose in Fig. 3.1). Winds from the east quadrant occur most often during the winter; this is primarily a drainage effect from nearby snowcapped mountains. For the remaining three seasons, the prevailing winds are from the quadrant centered about the west-southwest direction; these winds are associated with the persistent sea breeze produced by differential heating of land and water masses.

The annual mean surface wind speed at Norton AFB is 2.8 knots, or about 3.2 mi/h. Monthly mean wind speed is lowest during the fall (averaging 2.5 knots) and highest during the spring (averaging 3.1 knots). Surface wind speeds are greatest from the north (Fig. 3.1). The two distinct types of northerly winds are (1) abnormally dry, hot Santa Ana wind with an anticyclonic curvature and (2) cyclonic gradient wind. These winds, which sometimes reach gale velocity, flow over mountains and through mountain passes down into the coastal and intermediate valley. Gusts as high as 69 knots (about 80 mi/h) have been recorded at Norton AFB.



**FIGURE 3.1 Annual Wind Rose for Norton AFB, 1976-1985**  
 (Note: 1 knot = 1.15 mi/h) (Source: MAC Air Weather Service 1986)

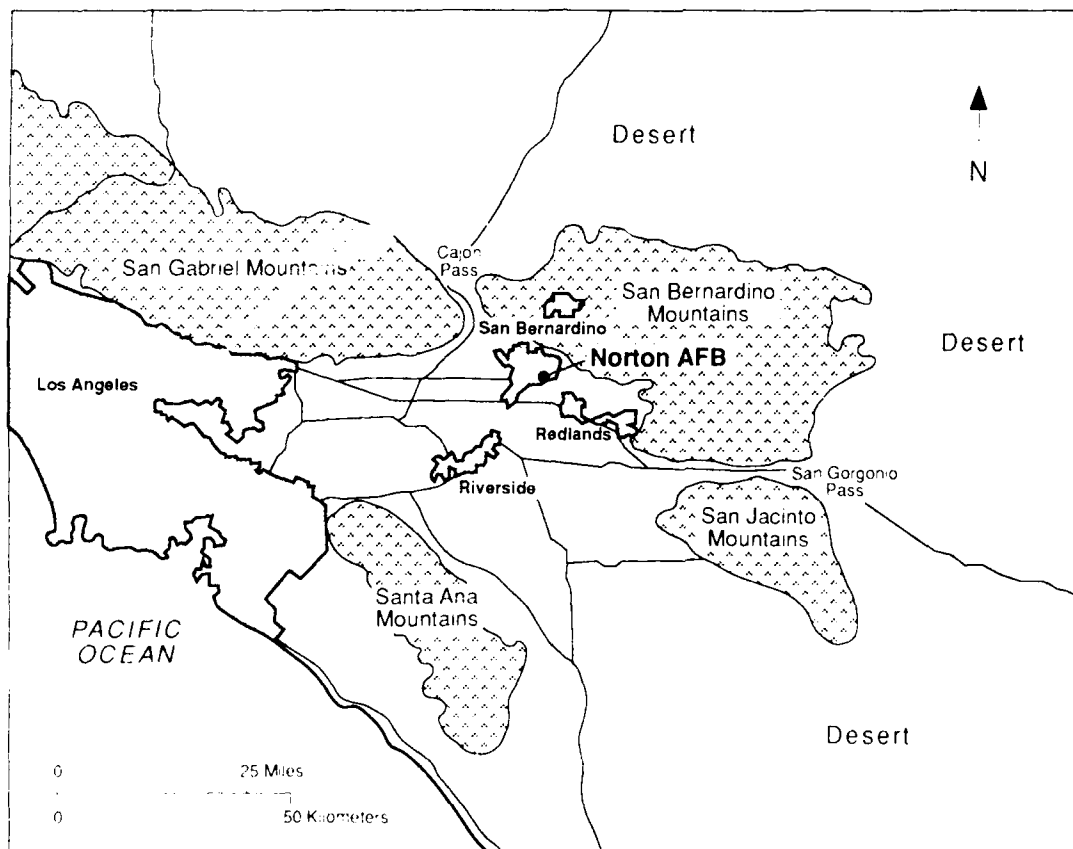
The annual mean of the maximum daily temperature is 78°F and the mean minimum is 49°F. These mean temperatures, however, do not reflect the wide temperature changes in the San Bernardino area that are influenced by the coastal marine layer, which is replaced at times by continental air masses. July is the hottest month, with an average maximum temperature of 95°F; temperatures above 100°F are very common in June, July, August, and September. January is the coolest month, with an average high of 63°F and low of 38°F. Subfreezing temperatures are occasionally recorded at night in December, January, and February.

Records from Norton AFB show that the annual average rainfall is 13.0 in.; however, 89% (11.5 in.) occurs during the winter months of November through April. January and February are the two wettest months, with average precipitation of 2.52 and 2.25 in., respectively. June and July, with average rainfall of 0.07 and 0.05 in., respectively, are the driest months. The net precipitation (difference between precipitation and evaporation) is negative in the San Bernardino Valley, as is typical for arid climates.

Afternoon (1 p.m.) relative humidities during winter months are generally in the range of 40%. Summer readings are lower, dropping to around 30% in the afternoon. However, relative humidity values occasionally drop to below 10% during periods of dry wind.

### 3.1.2 Topography and Geography

Norton AFB is located near the southeast corner of the city of San Bernardino and in the northeast corner of the San Bernardino Valley, one of the principal alluvial valleys in the physiographic provinces known as the Transverse and Peninsular ranges. The base is about 55 mi east of Los Angeles, 60 mi west of Palm Springs, and 45 mi northeast of the Pacific Ocean (at its nearest point). Figure 3.2 shows the major geographic features in the study area.



**FIGURE 3.2 Major Topographic and Geographic Features near Norton AFB**  
(Source: Based on Defense Mapping Agency 1987)

The San Bernardino Mountains, which trend east-west, are 6 mi north of the base. The San Jacinto Mountains, which trend north-south, begin about 20 mi southeast of the base; a smaller range trending northwest-southeast, the Santa Ana Mountains, begins 25 mi southwest of the base.

The San Bernardino Valley extends westward to the cities of Claremont and Pomona. Two major passes lead out of the valley: (1) the San Gorgonio Pass (sometimes referred to as the Beaumont or Banning Pass), which is 25 mi east-southeast of the base, and (2) the Cajon Pass, which is 15 mi northwest. The Santa Ana River, normally dry in the summer and fall, begins northwest of the base in the San Bernardino Mountains and continues through the citrus groves to the east. From there, it continues just south of the base and meanders southwestward out of the valley.

The overall gradient at Norton AFB slopes downward from east to west with a topographic relief of 0-9%. The eastern boundary of Norton is the highest point, with an elevation of 1,200 ft above mean sea level (MSL). The lowest point, 1,040 ft above MSL, is on the western boundary.

### **3.1.3 History**

Norton AFB was originally established as the San Bernardino Air Depot, an Army Air Force supply facility, in 1941. The base was renamed in 1950 to honor Captain Leland F. Norton, an A-20 bomber pilot and San Bernardino native who was killed in action over France in 1944.

The 63rd MAW traces its lineage back to the 63rd Transport Group, a C-47 airlift unit formed at Wright Field, Ohio, in 1940 to provide wartime movement of Defense personnel and material throughout the United States and Caribbean. In 1942, the Group became a Wing, transferred to Altus AFB, Oklahoma, and was deactivated in 1944. The Wing was reactivated in 1953, equipped with C-124s, and transferred to Donaldson AFB, South Carolina. With the closing of Donaldson AFB in 1963, the Wing moved to Hunter AFB, Georgia. When it closed in 1967, the Wing came to Norton AFB, began flying the C-141A, and started a beneficial association with the Inland Empire of Southern California.

## **3.2 PHYSICAL ENVIRONMENT**

### **3.2.1 Earth Resources**

#### **3.2.1.1 General Description**

Norton AFB is located on a vast apron of Pleistocene and Recent alluvium more than 1,000 ft thick, derived from the igneous and metamorphic complex exposed in the San Bernardino Mountains to the north and east. Granitic and gneissic rocks are the most common types in the alluvium at Norton AFB. The Santa Ana River Wash, which

forms the southern boundary of the base, is the largest drainage from the mountains. The channel of City Creek is located along the northern boundary of the base.

The soils at Norton AFB to a depth of 60 in. are classified primarily as belonging to the Tujunga-Soboba Association. Tujunga soils, which comprise the majority of the Norton AFB soils, are somewhat excessively drained and have a surface layer of brown, slightly acidic loamy sand that is gravelly in places. Below this is pale-brown, slightly acidic coarse sand. Soboba soils, which are found in the southeast portions of the base along the Santa Ana Wash, are excessively drained and have a surface layer of grayish-brown, slightly acidic, stony or gravelly loamy sand. Below this is brown, slightly acidic, very stony loamy sand and very pale brown, neutral, very stony sand. The soils of this association are used mainly for irrigated crops, dryland crops, and limited grazing. There are no agricultural activities on the base.

The soils of the Tujunga-Soboba Association are also used as a source of sand, gravel, and road fill. Several sand and gravel mining operations are located along the Santa Ana River bed near the base. Sand and gravel are the only mineral resources in the vicinity of the base.

#### **3.2.1.2 Installation Restoration Program**

Several different types of activities in the past at Norton AFB have had the potential to contribute to soil and groundwater contamination at the base. Such activities have included burial of drums and other unspecified materials at several sites in the golf course area; disposal of waste oil, solvent, paint residue, and similar substances into unlined pits, ponds, or drying beds; discharge of waste aviation fuel, oil, lubricant, and miscellaneous combustible materials during fire training exercises; storage of drums with possible leaks on unprotected surfaces; leakage from underground storage tanks containing waste oil, lubricant, and solvent; spills of aviation fuel, oil, solvent, polychlorinated biphenyls (PCBs), acidic plating solution, and similar substances onto unprotected surfaces; and burial of small quantities of low-level radioactive wastes.

These past activities resulted in Norton AFB being placed on the National Priority List (NPL) by the EPA (Federal Register, Vol. 52, p. 27642, July 22, 1987). The NPL is an EPA-generated list of the sites nationwide that, based on the EPA's calculations, have the potential to pose the greatest hazard to public health and thus warrant priority responses.

Under the mandate of the CERCLA and SARA federal statutes, the Air Force is actively pursuing a program to address and, as necessary, remediate environmental concerns created by these past practices. These federal statutes define the applicability of cleanup requirements to federal facilities (CERCLA Section 120) and establish the Defense Environmental Restoration Program (DERP) with one of its specific objectives being:

The identification, investigation, research and development, and cleanup of contamination from hazardous substances, pollutants, and contaminants (SARA Section 211).

The Air Force program to meet this mandated objective is called the Installation Restoration Program (IRP), which is a subcomponent of DERP. IRP and other DERP actions are funded under a special transfer account, the Defense Environmental Restoration Account (DERA), which also is codified in SARA Section 211. For NPL sites such as Norton AFB, the response actions taken under the IRP are to be consistent, to the maximum possible extent, with all EPA guidelines, rules, etc., which have been promulgated for the EPA CERCLA program.

Three response actions may be used individually or in combination to address an IRP site. They are (1) remedial action process, (2) removal, and (3) monitoring. The remedial action process is to be conducted in the four stages discussed below.

**Preliminary Assessment/Site Inspection (PA/SI) Stage.** During this stage, sites are identified and reviewed for (1) whether they merit further consideration in the IRP and (2) whether they merit placement on the NPL by EPA. A decision is made at the end of the PA/SI stage on which subsequent step to take (remedial investigation/feasibility study, removal, monitoring, or site closeout).

**Remedial Investigation/Feasibility Study (RI/FS) Stage.** The objectives of the remedial investigation portion of the RI/FS are to (1) determine the threat to public health and the environment posed by the site, (2) characterize the site, (3) perform a baseline risk assessment, (4) determine applicable or relevant and appropriate requirements (ARARs) for the site, and (5) perform waste treatability tests for the site. The objective of the feasibility study is to select a remedial action that will best mitigate the site's hazards to public health, welfare, or the environment. The RI and FS are interdependent and should be conducted concurrently.

Operable units, sometimes called interim remedial actions, are separable parts of a remedial action that are effective in reducing public health threats. These may be implemented during the RI/FS stage if they are believed to be cost-effective and consistent with the remedial action that will eventually be taken. They may also be implemented during the remedial stage as part of a stepped implementation of a remedial action.

**Remedial Design/Remedial Action (RD/RA) Stage.** Based on the findings of the RI/FS and in accordance with criteria set forth in SARA and NCP, a remedial action alternative is selected. The formal document presenting that selection is a Record of Decision (ROD) for NPL sites. For NPL sites, the Air Force selects a remedial action alternative, subject to the approval of the EPA Administrator.

Removals as a response action provide a means of responding to an immediate threat or of implementing relatively simple response actions that need not be preceded by detailed planning efforts, as for the remedial action process. They may either supplement or, in certain cases, take the place of a remedial action response.

Removals may involve a wide variety of actions, including those that:

- Remove a hazardous substance from the environment or
- Isolate a community from potential impact by that substance (using, for example, alternative drinking water supplies).

Monitoring as a third possible response action may be implemented when it is not clear whether the site poses a threat. The monitoring, which can be either long or short term, addresses the concentrations and spread of contamination from a site.

**Site Closeout Stage.** This step is taken following removal actions, monitoring responses, or certain remedial action steps if the threat to public health and environment is within prescribed or negotiated standards, or if and when at any time in the process no further action at the site is deemed required.

**Status of the IRP for Norton AFB.** At Norton AFB, 22 sites have been identified and evaluated in a process equivalent to the PA/SI stage. At the time these studies were completed, the Air Force IRP program was implemented as a four-phase program with the following designations:

- Phase I      Records Search
- Phase II     Confirmation and Quantification
- Phase III    Technology Base Development
- Phase IV    Corrective Action

Investigations at Norton AFB were completed through what was designated as IRP Stage 3. These sites and the work performed at each during the most recent and comprehensive field study (IRP, Stage 3) are given in Table 3.1; the sites are shown in Fig. 3.3.

For Norton AFB, the procedures for completing the remaining IRP stages have been specified in a formal IAG between the EPA, Air Force, and California Department of Health Services (IAG 1989). This agreement also provides schedules for setting of deadlines for completion of the IRP.

The environmental impact of unit withdrawal from Norton, which is being assessed in this EIS, does not directly relate to activities under Stages 2-3 of the IRP. These stages of the IRP would relate more directly to any actions necessary for disposal and reuse of Norton AFB, which will be the subject of the reuse EIS.

TABLE 3.1 IRP Sites at Norton AFB<sup>a</sup>

Site No.	Site Name	Fieldwork Performed during Phase II
1	Industrial waste lagoons	<ul style="list-style-type: none"> <li>- Soil gas survey</li> <li>- 5 boreholes drilled</li> <li>- 1 borehole completed as monitoring well</li> <li>- 5 monitoring wells installed</li> <li>- 34 soil samples collected</li> <li>- 49 water samples collected</li> </ul>
2	Landfill No. 2	<ul style="list-style-type: none"> <li>- 16 wells installed (north-east base groundwater operable unit)</li> <li>- 12 soil samples collected</li> <li>- 44 water samples collected</li> </ul>
3	Waste pit No. 2	<ul style="list-style-type: none"> <li>- Soil gas survey</li> <li>- Geophysical survey</li> <li>- 4 water samples collected</li> </ul>
4	Waste pit No. 1	- See site 1 fieldwork performed
5	Fire protection training area No. 2	<ul style="list-style-type: none"> <li>- Soil gas survey</li> <li>- 6 boreholes drilled</li> <li>- 43 soil samples collected</li> </ul>
6	Underground waste oil storage tank	<ul style="list-style-type: none"> <li>- Soil gas survey</li> <li>- Geophysical survey</li> <li>- 6 boreholes drilled</li> <li>- 31 monitoring wells installed</li> <li>- 21 soil samples collected</li> <li>- 113 water samples collected</li> </ul>
7	IWTP sludge drying beds	<ul style="list-style-type: none"> <li>- 8 boreholes drilled</li> <li>- 34 soil samples collected</li> <li>- 6 monitoring wells installed</li> <li>- 8 observation wells installed</li> <li>- 55 water samples collected</li> </ul>
8	PCB spill area (gate 10)	- Soil borings were analyzed in previous efforts. Site 8 will be proposed for closeout as part of the upcoming RI/FS
9	Electroplating shop spill area	<ul style="list-style-type: none"> <li>- 9 water samples collected</li> <li>- 8 boreholes drilled</li> <li>- 15 soil samples collected</li> <li>- 6 monitoring wells installed</li> </ul>

TABLE 3.1 (Cont'd)

Site No.	Site Name	Fieldwork Performed during Phase II
10	Landfill No. 1	<ul style="list-style-type: none"> <li>- Soil gas survey</li> <li>- Geophysical survey</li> <li>- 8 soil samples collected</li> <li>- 3 monitoring wells installed</li> <li>- 4 SWAT soil samples collected</li> <li>- 8 water samples collected</li> </ul>
11	Field sludge drying area	- See site 2 fieldwork performed
12	Waste pit No. 3	- See site 10 fieldwork performed
13	IWTP sludge disposal area	<ul style="list-style-type: none"> <li>- 3 boreholes drilled</li> <li>- 1 boring completed as a monitoring well</li> <li>- 21 soil samples collected</li> <li>- See site 7 description for water samples</li> </ul>
14	Waste pit No. 4	<ul style="list-style-type: none"> <li>- Soil gas survey</li> <li>- 2 boreholes drilled</li> <li>- 9 soil samples collected</li> <li>- See site 6 description for water samples</li> </ul>
15	S-290 tank	<ul style="list-style-type: none"> <li>- 5 boreholes drilled</li> <li>- 17 soil samples collected</li> <li>- Soil gas survey</li> </ul>
16	AAVS evaporation basins	- Monitoring well installation and sampling described for site 2
17	Drummed waste storage area/waste fuel and solvent sumps	<ul style="list-style-type: none"> <li>- 4 boreholes drilled</li> <li>- 18 soil samples collected</li> </ul>
18	AVGAS spill area	<ul style="list-style-type: none"> <li>- Soil gas survey</li> <li>- 3 boreholes drilled</li> <li>- 9 soil samples collected</li> <li>- 3 monitoring wells installed</li> <li>- 10 water samples collected</li> </ul>
19	Waste drum storage area No. 2	<ul style="list-style-type: none"> <li>- 3 monitoring wells installed</li> <li>- 9 water samples collected</li> </ul>

TABLE 3.1 (Cont'd)

Site No.	Site Name	Fieldwork Performed during Phase II
20	Low-level radioactive waste burial site	- Geophysical survey
21	Underground ferricyanide tank	- Monitoring well installation and sampling conducted; see site 2 description
22	IWTP discharge ditch outfall area	- 2 borings drilled - 11 soil samples collected - 2 monitoring wells completed from the borings - Well sampling conducted; see site 2 description

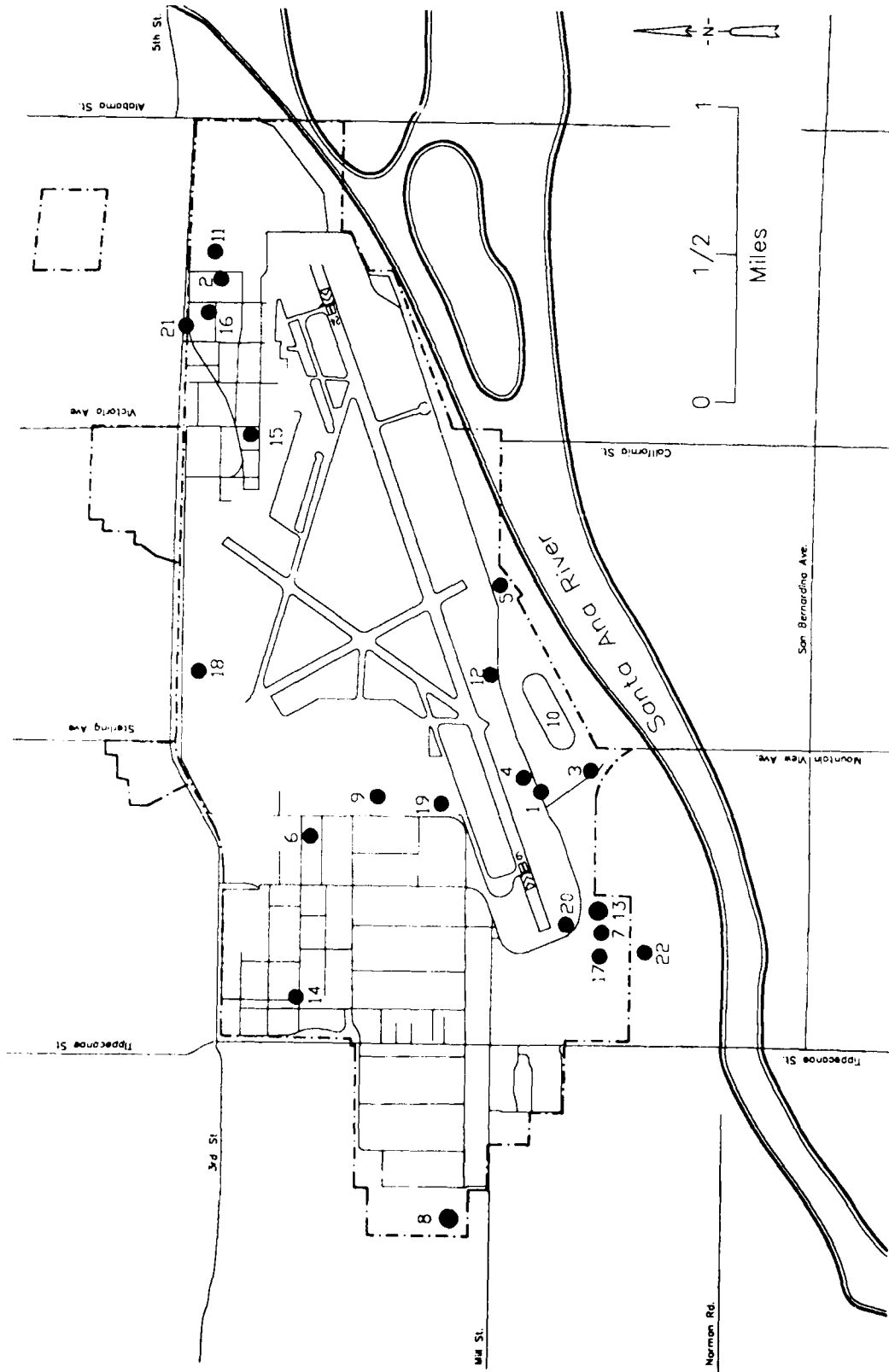
<sup>a</sup>Locations are shown in Fig. 3.3.

Source: Ecology and Environment (1988).

Although the IRP is not directly related to the withdrawal action in this document, it was considered essential to investigate any indirect effects that could occur. As a basis for that investigation, a description of the IRP sites at Norton AFB is provided below; it was adapted from the most recent IRP report for Norton AFB (Ecology and Environment 1988).

The Norton AFB IRP investigation included fieldwork and sample collection, data compilation and evaluation, and endangerment assessments. The fieldwork included geophysical surveys (including borehole logging), drilling of boreholes and installation of monitoring wells, collection of soil and groundwater samples, and aquifer pumping tests. The data gathered provided the basis for the risk assessment. The risk assessments were based on the potential for direct contact with contaminated soils or the use of contaminated water for drinking. The results of the studies to date do not provide the data necessary to fully characterize the risk.

In the golf course area (sites 1, 3, 4, 5, 10, and 12), organics contamination (trichloroethylene [TCE] and benzene) of groundwater at site 1 and metals contamination of surface soils at site 5 may pose a risk to human health. Groundwater contamination (TCE and benzene) in the industrial wastewater treatment plant (IWTP) area (sites 7, 13, 17, 20, and 22) may also pose health risks as well as the potential for migration to nearby Gage Company drinking water wells. In addition, metals contamination of surface soils at site 13 has the potential for health risks, and organics contamination of subsurface



**FIGURE 3.3 Installation Restoration Program Sites at Norton AFB (see Table 3.1 for the site names)  
(Source: Locations from Ecology and Environment 1988)**

soils poses the potential of migration to area groundwater. In the central base area (sites 6, 9, 14, and 19), groundwater contamination (mainly with organics) may pose health risks and metals contamination of subsurface soils at site 9 could migrate to the groundwater.

Site 18 was found to have minor organics (TCE) and metals contamination of groundwater, but at levels not expected to produce adverse health effects. Site 8 was identified as posing no risk to human health.

The RI/FS concluded that groundwater contamination at the base presents a health concern due to the heavy use of area groundwater for drinking water supplies. In some cases, present supplies may be threatened; in addition, future supplies could be threatened if the current contamination is not mitigated.

### **3.2.1.3 Underground Storage Tanks**

The current inventory of underground storage tanks (USTs) at Norton AFB includes 77 active tanks and 33 inactive tanks. The tanks have been used primarily for storage of various petroleum products, both virgin and used. The locations of these tanks are illustrated in Fig. 3.4, and a listing of tanks is given in Tables 3.2 and 3.3.

Fiscal year 1989 DERA funds are being used to remove 26 of the 33 inactive tanks. The seven remaining tanks will be closed in accordance with applicable regulatory requirements for permanent closure of USTs. The Air Force has also funded a leak detection plan for all active tanks. Active UST leak detection will be implemented by annual precision tank tightness testing coupled with monthly inventory control.

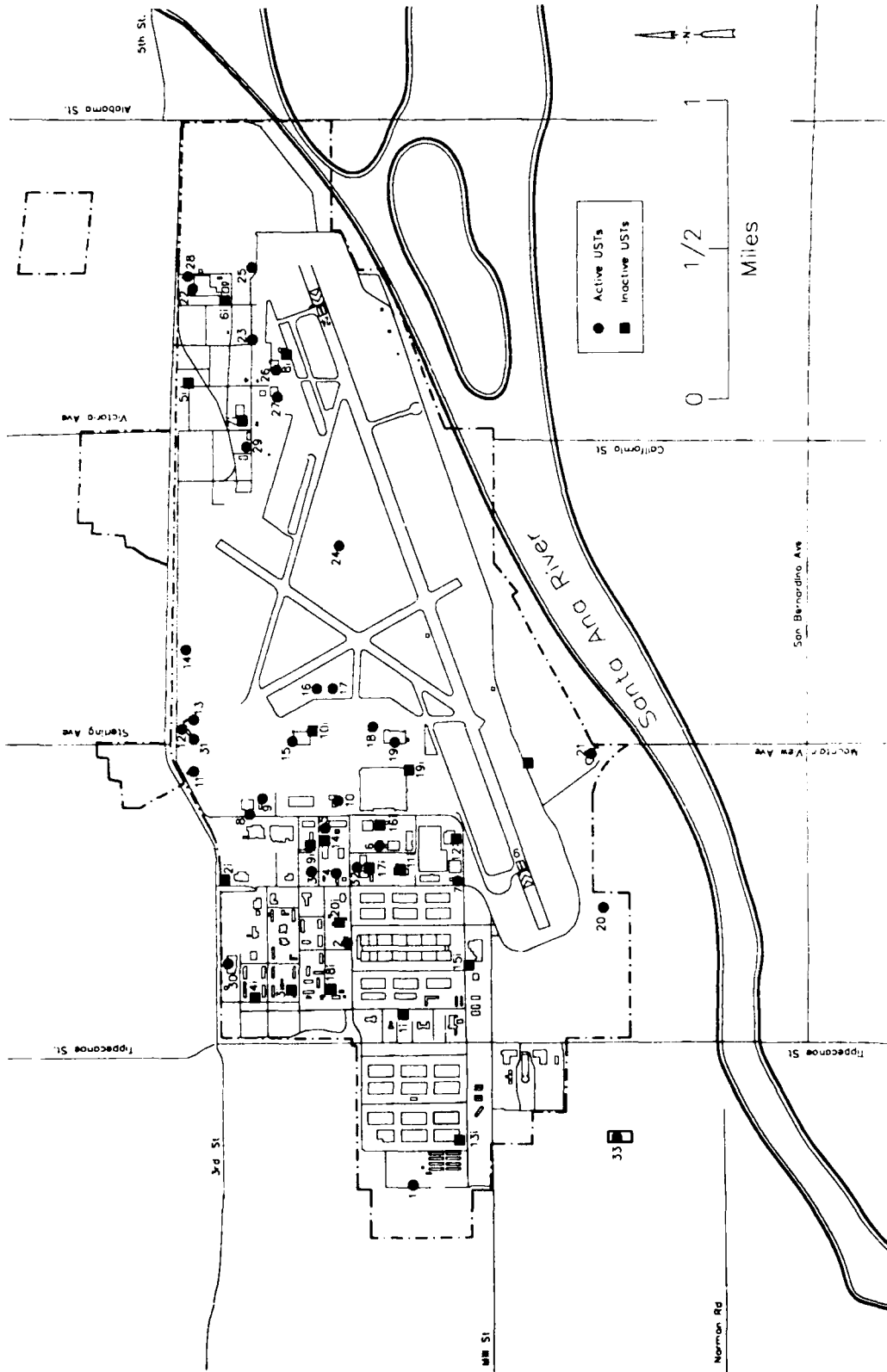
As soon as the tank tightness testing results are available, the Air Force will develop a plan to manage the tanks. This plan will be submitted for approval to San Bernardino County officials, the regulatory authority for this issue.

## **3.2.2 Air Resources**

### **3.2.2.1 Meteorology**

The potential for episodes of high air-pollutant concentrations in the San Bernardino Valley is substantially influenced by the meteorological conditions of the area and the emissions of precursor pollutants from the surrounding air basin. Important meteorological parameters include wind speed, wind direction, depth of the mixing layer (determined by the height of the inversion base), and solar intensity (which promotes photochemical smog formation).

As described in Section 3.1.1, westerly breezes prevail during the summer months when the sun is highest and days longest. With westerly winds, large quantities of precursor emissions from the coastal sections of southern California are transported into the area and, with strong insolation, maximum amounts of photochemical smogs are produced. Conversely, the easterly breezes prevail during winter months when the nights



**FIGURE 3.4 Locations of Underground Storage Tanks at Norton AFB (see Tables 3.2 and 3.3 for descriptions of the tanks)**  
 (Source: Norton AFB 1988b)

**TABLE 3.2 Inventory of Active USTs (as of Oct. 27, 1988)<sup>a</sup>**

Site	Location (Fac. No.)	No. of Tanks	Total Capacity (gal)	Contents
1	984	1	500	Heating fuel No. 2
2	468	2	10,000	Diesel fuel
3	620	5	10,000	Gasoline
		1	550	Waste oil
4	617	1	1,000	Motor gasoline
5	650	2	25,000	Gasoline
		1	25,000	Diesel fuel
		2	50,000	Fuel oil No. 2
6	757	2	500	Waste oil
7	716	2	25,000	Fuel oil No. 2
		3	50,000	Fuel oil No. 2
8	672	1	4,000	Fuel oil No. 2
9	675	2	12,500	Diesel fuel
		1	5,000	JP-4
		1	10,000	Gasoline
10	680	1	550	Waste oil
11	803	1	2,000	Slop tank (normally empty)
		6	50,000	JP-4
12	819	1	2,000	Slop tank
13	823	1	5,000	Waste fuel
14	805	1	2,000	Waste fuel
15	697	2	10,000	Fuel oil No. 2
16	804	1	2,000	Waste fuel (normally empty)
		8	50,000	JP-4
17	809	1	2,000	Waste fuel (normally empty)
		8	50,000	JP-4
18	794	1	500	Diesel fuel (new, never used)
19	795	1	750	Diesel fuel
20	1264	1	1,200	Motor gasoline
21	818	1	2,000	Fuel oil No. 2
22	249	3	30,000	Fuel oil No. 2
23	2333	1	10,000	JP-4
24	844	1	1,000	Diesel fuel
25	863	1	300	Diesel fuel
26	333	1	1,000	Fuel oil No. 2
27	341	1	500	Fuel oil No. 2
28	245	2	1,600	Photoprocessing waste sumps
29	289	1	150	Motor gasoline
30	100	1	550	Fuel oil No. 2
31	820	1	300	Waste fuel
32	726	1	500	JP-4
33	3101	1	550	Diesel fuel
Total		77		

<sup>a</sup>Excluded are three tanks at the IWTP (Bldg. 1264): primary clarifier tank, flocculation tank, and ozonator tank.

Source: Norton AFB (1988b).

**TABLE 3.3 Inventory of Inactive USTs  
(as of Jan. 25, 1988)**

Site	Location (Fac. No.)	No. of Tanks	Total Capacity (gal)
1i	S-21	1	350
2i	S-38	1	1,000
3i	142	1	500
4i	169	1	550
		3	10,000
5i	222	1	1,000
6i	226	2	10,000
7i	302	1	6,000
8i	335	1	2,000
9i	645	1	750
10i	695	1	1,000
11i	705	1	550
		1	5,000
		1	2,000
12i	749	1	6,000
13i	948	1	3,000
14i	650 <sup>a</sup>	3	25,000
15i	514	1	12,000
16i	754	2	30,000
17i	726	2	500
18i	427	1	300
19i	763	1	1,000
20i	477	2	250
21i	245	1	1,600
22i	811	1	350
Total		33	

<sup>a</sup>Tanks 2C, 2E, and 2F.

Source: Norton AFB (1988b).

are longest. With easterly winds, the area becomes the source, rather than the receptor, of pollutants in the coastal areas.

The San Bernardino Valley, like most of the areas in coastal southern California, experiences a low-level temperature inversion during most of the year. The height of the inversion base determines the maximum depth of space available for the mixing and dilution of pollutants. During winter months, early morning inversion bases are initially at the surface on an average of two out of three mornings, but a vertical mixing layer extends to about 4,000 ft by early afternoon, lifting the relatively weak inversion layers or eroding them entirely by convective currents from surface heating. This situation typically allows an accumulation of primary pollutants such as carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), and lead (Pb) during the early morning hours, with rapid improvement in air quality by early afternoon as the trapped pollutants are allowed to disperse.

During summer months, the height of the early morning inversion base (or mixing layer) averages about 1,400 ft. The afternoon mixing layer extends to only about 2,800 ft, since the summer inversion layers are stronger, more persistent, and less prone to be entirely eroded by surface heating. Consequently, summertime concentrations of most primary pollutants are usually lower than those of winter. Photochemical oxidant concentrations, however, are much higher in summer than in winter. During summer, more solar radiation is available to drive photochemical reactions, and the afternoon vertical mixing layer is far lower than that during winter, which contributes to higher levels of ozone and other pollutants in this season.

### 3.2.2.2 Air Pollutant Emission Sources

Ambient air quality in the Norton AFB area is primarily influenced by the emissions from the surrounding area, that is, the South Coast Air Basin (SCAB). The SCAB includes the nondesert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County.

The major sources of emissions associated with Norton AFB include aircraft flight and maintenance operations, motor vehicle operations, boilers and furnaces, fire training exercises, painting and metal cleaning operations, aircraft engine testing, and stationary internal combustion engines. A summary of emissions contributed by each source category is provided in Table 3.4. Emissions data for the individual stationary emission sources were obtained from a summary of emissions data prepared by Norton AFB for the South Coast Air Quality Management District (SCAQMD) and a volatile organic compound emissions inventory prepared by Argonne National Laboratory for Norton AFB (Cuscino and Spessard 1988). The emission factors used in compiling the emissions inventories in the data sources were in general either AP-42 emission factors (EPA 1985) or emission factors provided by the SCAQMD. When base personnel could provide more recent data for stationary sources, these data were used. Table 3.4 also lists the number of emission sources in each source category with valid permits from the SCAQMD. All permitted sources (39) are currently in compliance with the district's stack testing and other permit requirements. In addition, 8 permit applications for

TABLE 3.4 Emissions of Air Pollutants from Sources Associated with Norton AFB, 1987-1988 (lb/day)

Source Category	Reactive Organic Gas (ROG)	Nitrogen Oxides (NO <sub>x</sub> )	Carbon Monoxide (CO)	Sulfur Dioxide (SO <sub>2</sub> )	Suspended Particulates (TSP)	Particulate Matter ≤10 μm (PM <sub>10</sub> )
<b>Stationary Sources</b>						
Boilers, furnaces, and incinerators (11) <sup>a</sup>	1.3	481.5	35.2	3.6	2.7	2.7
Internal combustion engines (3)	3.2	39.8	8.7	2.6	2.8	2.7
Jet engine testing (1)	33.3	30.0	42.9	3.0	2.6	2.5
Fire training exercises	66.3	1.0	70.6	0.3	67.5	65.5
Painting and metal cleaning operations (12)	175.6	0	0	0	0	0
Printing operations	8.3	0	0	0	0	0
Fuel storage and handling (13)	48.8	0.7	0.1	0	0	0
JP-4 fuel spills	10.6	0	0	0	0	0
Herbicides and insecticides	0.6	0	0	0	0	0
Wastewater treatment plant	3.9	0	0	0	0	0
Subtotal	351.9	553.0	157.5	9.5	75.6	73.4
<b>Mobile Sources</b>						
<b>Aircraft</b>						
Flight operations						
Assigned aircraft	7,571.9	912.2	9,564.0	185.1	68.5	66.9
Transient aircraft	371.9	169.0	728.4	19.9	6.5	6.3
Engine maintenance	806.9	737.7	1,035.2	70.4	55.4	54.1
<b>Motor vehicles<sup>b</sup></b>						
Assigned vehicles	51.7	94.1	430.8	4.7	27.7	21.7
Commuting vehicles	332.6	279.6	3,260.8	16.4	192.9	131.9
Delivery trucks	75.0	370.3	827.7	17.4	75.7	66.8
Subtotal	9,210.0	2,562.8	15,846.9	313.9	426.7	347.7
Total	9,561.9	3,115.8	16,004.4	323.4	502.3	421.1

<sup>a</sup>Numbers in parentheses indicate the number of permitted emission sources in the category.<sup>b</sup>Lead emissions from motor vehicle operations are 0.62 lb/day.

Sources: Norton AFB (1989a-c); Cuscino and Spessard (1988); Rodriquez (1989); Choy (1989); Baldwin (1989); Pasha (1989); Alcock (1989).

various existing emission sources are currently pending. Norton AFB does not hold any emission-reduction credits at present.

Emissions associated with aircraft operations were estimated using the emissions factors compiled by Seitchek (1985) and Norton AFB operations data for 1987. Emissions associated with aircraft engine maintenance were estimated using emission factors from Seitchek (1985) and frequency-of-maintenance and other maintenance data from Norton AFB.

Emission factors used for estimating vehicular emissions were derived from the projected 1990 vehicular emissions data and other traffic-related data for San Bernardino County obtained from the California Air Resources Board (CARB 1989). Vehicular activities (measured in vehicle-miles traveled) for trips to and from Norton AFB were based on (1) the estimated number of vehicles operated by the base employees and military retirees residing in the Norton AFB area, considering car pooling; (2) the estimated frequencies of employee commuting and retiree visits to the commissary at Norton AFB; and (3) the distances estimated from the distribution of employee residences by zip code (see Section 3.4.5.3). Emissions from vehicles assigned to Norton AFB were based on (1) the number of vehicles assigned by vehicle type and (2) annual fuel consumption and vehicle-miles traveled. Truck activities were estimated from the average number of truck deliveries per day and the average distance between Norton AFB and the origins of shipments as supplied by base personnel.

The annual total emissions from all categories of sources associated with Norton AFB during the period 1987-1988 were about 8.0 tons/day of CO; 4.8 tons/day of reactive organic gases (ROG)\*; 1.6 tons/day of NO<sub>x</sub>; 0.25 tons/day of total suspended particulates (TSP), which includes 0.21 tons/day of particulate matter with aerodynamic diameters equal to or less than 10  $\mu$ m (PM<sub>10</sub>); 0.16 tons/day of sulfur dioxide (SO<sub>2</sub>); and 0.7 lb/day of Pb.

Daily quantities of air pollutants emitted in 1985 from the SCAB and the SCAB portions of San Bernardino and Riverside<sup>†</sup> counties are listed in Table 3.5 along with those estimated for the sources associated with Norton AFB during the period 1987-1988. The significance of the emissions from the portions of San Bernardino and Riverside counties within SCAB is expressed as a percentage of the total SCAB emissions, and that of the emissions associated with Norton AFB as percentages of the emissions from San Bernardino County (SCAB portion) and SCAB. The emissions from the SCAB portion of San Bernardino and Riverside counties account for about 8% and 6% of the SCAB emissions, respectively. The emissions associated with Norton AFB account for a small fraction of the emissions produced in its surrounding area, that is, about 2.0% of the emissions from the SCAB portion of San Bernardino County and about 0.16% of the total SCAB emissions.

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\*Hydrocarbons that contribute to ozone formation.

<sup>†</sup> Twenty-four of the 56 aircraft currently assigned to Norton AFB are to be transferred to March AFB, which is also located in the SCAB portion of Riverside County.

**TABLE 3.5 Emissions of Air Pollutants from the South Coast Air Basin, San Bernardino and Riverside Counties, and Norton AFB**

Pollu- tant	SCAB Portion of San Bernardino County (SBC)			SCAB Portion of Riverside County			Norton AFB		
	SCAB (tons/day) <sup>a</sup>	tons/day <sup>a</sup>	% of SCAB	tons/day <sup>a</sup>	% of SCAB	tons/day <sup>b</sup>	% of SCAB	% of SBC	
ROG	1,246.4	108.0	8.7	79.5	6.4	4.78	0.38	4.43	
NO <sub>x</sub>	1,039.8	85.1	8.2	54.2	5.2	1.56	0.15	1.83	
CO	5,430.0	409.0	7.5	323.6	6.0	8.00	0.15	1.96	
SO <sub>2</sub>	121.1	5.8	4.8	3.3	2.7	0.16	0.13	2.76	
TSP	1,645.2	141.5	8.6	137.8	8.4	0.25	0.02	0.18	

<sup>a</sup>Source: South Coast Air Quality Management District (1988).

<sup>b</sup>From Table 3.4.

### 3.2.2.3 Air Quality

Ambient air quality has not been monitored within the boundary of Norton AFB. The nearest ambient air quality monitoring stations are located in the cities of San Bernardino (about 3.7 mi northwest), Redlands (about 5.6 mi southeast), and Riverside (about 12.3 mi southwest). Levels of all criteria air pollutants (ozone, CO, NO<sub>2</sub>, SO<sub>2</sub>, TSP and PM<sub>10</sub>, and Pb) and sulfate (SO<sub>4</sub>) are monitored at the San Bernardino and Riverside stations. The Redlands station has measured only ozone levels since 1987. The approximate locations of these monitoring stations are shown in Fig. 3.5.

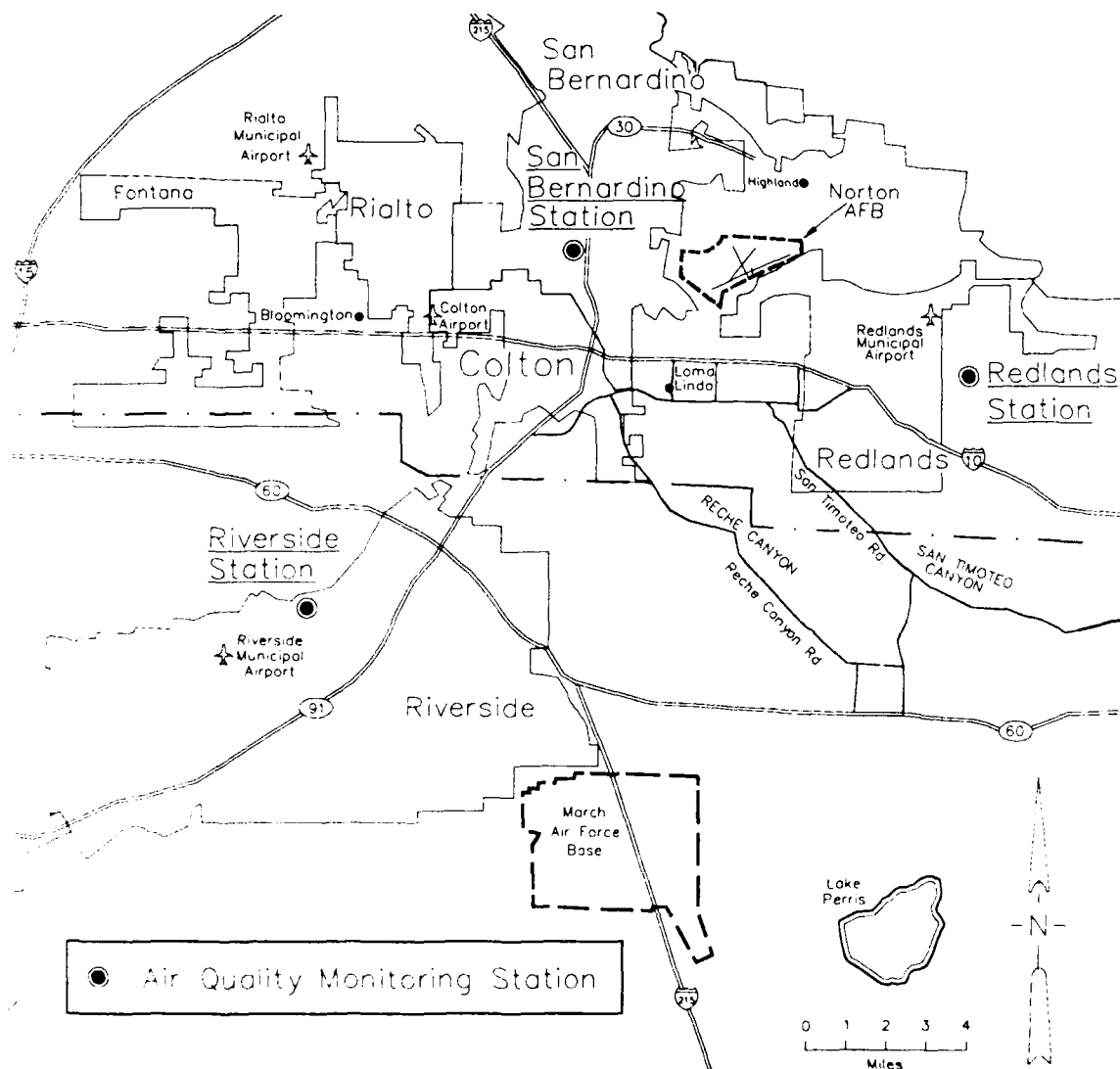
Table 3.6 provides a summary of the ambient air quality monitored at San Bernardino, Redlands, and Riverside during 1988; the table also lists applicable National and California Ambient Air Quality Standards (NAAQS and CAAQS, respectively). The CAAQS are in general more stringent than the NAAQS. As the data indicate, the greatest air quality problem in the vicinity of Norton AFB, as well as in the entire SCAB, is ozone. For the three stations, the California standard for ozone was exceeded on 173-178 days in 1988, about one-half of the days in the year. The exceedances are far more prevalent during summer, indicating almost continuously excessive ozone levels. During 1988, levels of PM<sub>10</sub> (measured every six days) exceeded the California standard 40-51 times, or over 70% of the observations, at the two monitoring stations near Norton AFB. In contrast to ozone and PM<sub>10</sub>, the levels of other air pollutants are relatively low when compared with applicable ambient standards. The CAAQS and NAAQS for CO, NO<sub>2</sub>, SO<sub>2</sub>, and Pb have not been exceeded during the last five years (CARB 1984-1988 -- see Section B.1 in App. B). The California SO<sub>4</sub> standard was also not exceeded during the same period.

The SCAB portion of San Bernardino County, which includes Norton AFB, is currently designated as in attainment for the NAAQS for SO<sub>2</sub> but nonattainment for ozone, CO, NO<sub>2</sub>, and TSP (which includes PM<sub>10</sub>) (40 CFR 81.305). Although not formally identified as such, this area is in attainment for Pb, but in nonattainment for PM<sub>10</sub> (Goldberg 1989). The area's designation under the CAAQS has recently been adopted by CARB. The designations are in attainment for CO, SO<sub>2</sub>, and Pb; in nonattainment for ozone, NO<sub>2</sub>, PM<sub>10</sub>, and SO<sub>4</sub>; and unclassified for hydrogen sulfide (H<sub>2</sub>S) and visibility-reducing particles (Range 1989).

The data evaluated (App. B) indicate that the ambient levels of ozone, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and sulfate in the vicinity of Norton AFB did not show any significant increasing or decreasing trends during the last five years. The only air pollutant with a definite downward trend during the last five years is Pb. In addition, the air quality trends for the three stations discussed, which are located on different sides of Norton AFB, are similar, leading to the conclusion that the air quality patterns are similar throughout the Norton AFB area.

### 3.2.3 Water Resources

Unless indicated otherwise, the source of water resource information is Ecology and Environment (1988).



**FIGURE 3.5 Ambient Air Quality Monitoring Stations near Norton AFB (Source: Locations from CARB 1984-1988)**

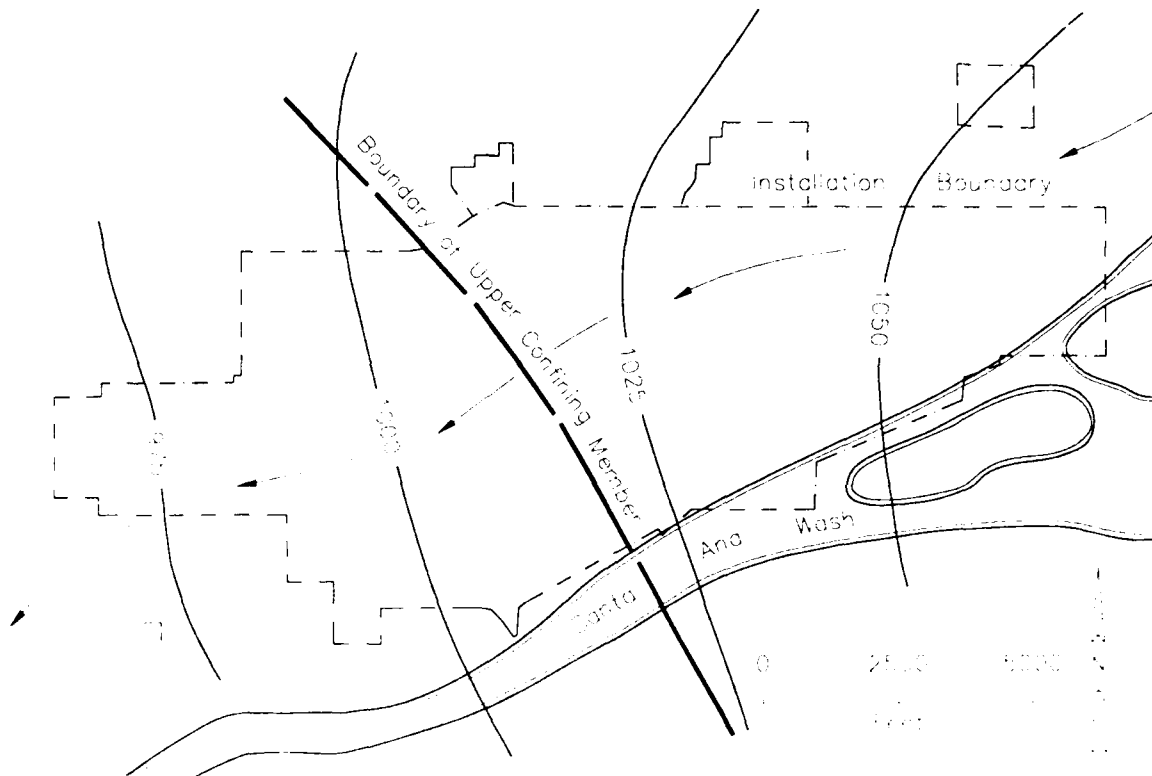
### 3.2.3.1 Groundwater

Norton AFB is located within the 110-sq mi Bunker Hill groundwater basin. This basin is recharged predominantly by runoff from the San Bernardino Mountains. Recharge also occurs by groundwater inflow from the San Timoteo Basin to the southeast and by penetration of surface water. Discharge from the basin occurs from flow into the Rialto-Colton groundwater basin to the southwest and from extraction by groundwater wells. The basic structure of the basin is three water-bearing zones separated by three confining zones. Figure 3.6 illustrates the elevation of the upper aquifer and the general groundwater flow direction from northeast to southwest.

**TABLE 3.6 Summary of Ambient Air Quality Data from the Vicinity of Norton AFB in 1988**

Pollutant	Parameter Measured	Unit	Averaging Period	San Bernardino	Redlands	River-side	Standard	
							CAAQS	NAAQS
Ozone	1st high	ppm	1 hour	0.28	0.29	0.28	0.09	0.12
	2nd high	ppm	1 hour	0.26	0.28	0.25		
	Days $\geq$ CAAQS	No.	1 hour	173	176	178		
	Days $\geq$ NAAQS	No.	1 hour	121	130	123		
CO	1st high	ppm	1 hour	9.0	-	9.0	20	35
	2nd high	ppm	1 hour	9.0	-	9.0		
	1st high	ppm	8 hours	7.6	-	6.8	9.0	9.0
	2nd high	ppm	8 hours	7.0	-	5.9		
NO <sub>2</sub>	1st high	ppm	1 hour	0.19	-	0.19	0.25	
	2nd high	ppm	1 hour	0.17	-	0.18		
	Arithmetic mean	ppm	1 year	0.042	-	0.037	-	0.05
SO <sub>2</sub>	1st high	ppm	1 hour	0.02	-	0.02	0.25	-
	2nd high	ppm	1 hour	0.02	-	0.02		
	1st high	ppm	24 hours	0.012	-	0.012	0.05	0.14
	2nd high	ppm	24 hours	0.009	-	0.011		
PM <sub>10</sub>	Arithmetic mean	ppm	1 year	0.002	-	0.001	-	0.03
	1st high	$\mu\text{g}/\text{m}^3$	24 hours	289	-	252	50	150
	2nd high	$\mu\text{g}/\text{m}^3$	24 hours	171	-	177		
	Samples $>$ CAAQS	No.	24 hours	40	-	51		
Pb	Samples $>$ NAAQS	No.	24 hours	3	-	7		
	Observations	No.		56	-	61		
	Geometric mean	$\mu\text{g}/\text{m}^3$	1 year	66.8	-	81.8	30	-
	Arithmetic mean	$\mu\text{g}/\text{m}^3$	1 year	80.2	-	94.9	-	50
SO <sub>4</sub>	1st high	$\mu\text{g}/\text{m}^3$	30 days	0.12	-	0.10	1.5	-
	1st high	$\mu\text{g}/\text{m}^3$	cal. qtr.	0.08	-	0.17	-	1.5
SO <sub>4</sub>	1st high	$\mu\text{g}/\text{m}^3$	24 hours	15.8	-	23.6	25	-
	2nd high	$\mu\text{g}/\text{m}^3$	24 hours	15.0	-	13.1		

Source: CARB (1984-1988).

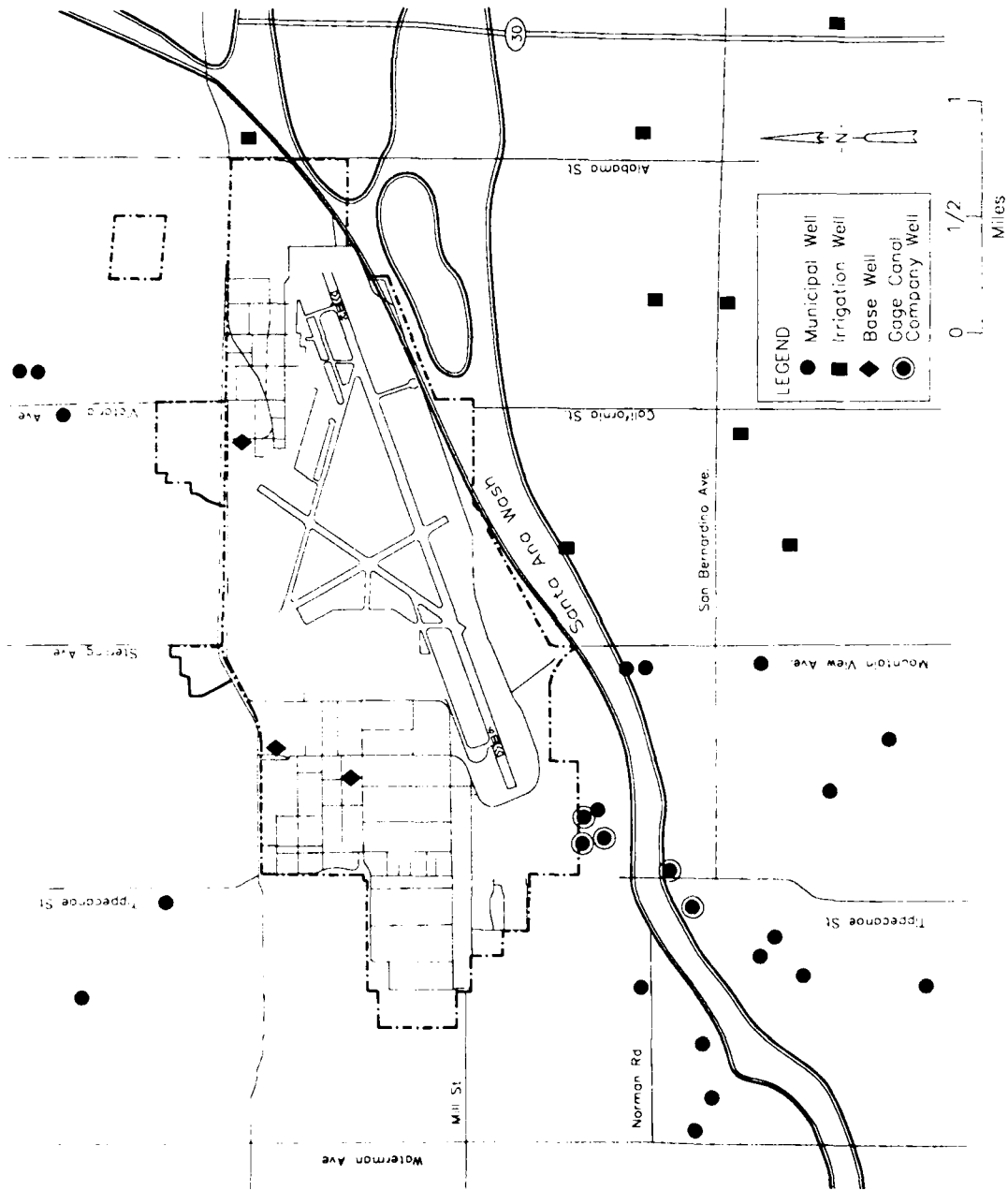


**FIGURE 3.6 Groundwater Elevation (ft) of the Upper Aquifer and General Groundwater Flow near Norton AFB (Source: Adapted from Engineering Science 1982)**

In the vicinity of Norton AFB, the combined middle and lower water-bearing zones and lower confining member function as a single aquifer beginning at a depth of about 650 ft and extending below that for 500-700 ft. This aquifer serves as the source of groundwater extracted for use on the base and in the surrounding communities. Water wells on the Norton AFB property and in the immediate vicinity are illustrated in Fig. 3.7. The current annual water consumption by Norton AFB is estimated as 840 million gal per year produced by on-site wells for use by the base units. An additional 50 million gal per year is purchased from surrounding communities for use by base housing.

Historically, this area has had ample water supplies. Prior to development in the 1800s, bogs and marshes occurred in the basin, including areas on the eastern portions of the current Norton AFB site. This abundant water supply led to heavy development with resultant sharp declines in groundwater levels. A combination of above-normal rainfall in winter and improved water management over the past 10 years has resulted in a return to somewhat higher groundwater levels.

Drinking water derived from deeper aquifer zones is generally of good quality. In base wells, silver in the range of 11-29 micrograms per liter ( $\mu\text{g/L}$ ) has been detected, as has trichloroethylene at 1.5-6.2  $\mu\text{g/L}$ . In addition, the Gage Canal Company wells, which



**FIGURE 3.7 Water Wells at Norton AFB and in the Surrounding Area (Source: Adapted from Engineering Science 1982)**

serve the city of Riverside and are located immediately south of the base (see Fig. 3.7), have exhibited trichloroethylene concentrations ranging from 0.17 to 2.3  $\mu\text{g/L}$ , according to the California Department of Health Services sampling and analyses conducted in 1980 and 1981. Also, perchloroethylene was detected in the same wells, with the 1980-1981 test results varying from 0.12 to 2.5  $\mu\text{g/L}$  (Engineering Science 1982). The state of California drinking-water standards are 50  $\mu\text{g/L}$  for silver and 5  $\mu\text{g/L}$  for trichloroethylene; no standards are given for perchloroethylene (22 CAC). Therefore, monitoring data from the deep aquifer indicate that the trichloroethylene on the base can exceed the water quality standards.

### **3.2.3.2 Surface Water**

Three stream channels are located in the vicinity of Norton AFB. The westward-flowing Santa Ana River adjoins the base along its southern boundary. City Creek to the north of the base (diverted to a concrete channel parallel to Third Street), along with a minor unnamed tributary to its west, flows westward into the third stream channel, Warm Creek. Figure 3.8 illustrates these streams, the surface drainage on the base, and the 100-year flood plain (defined as areas having a 1% probability of being inundated with flood water in any one year). The surface streams in this area are normally dry and convey water only during or immediately after heavy regional precipitation.

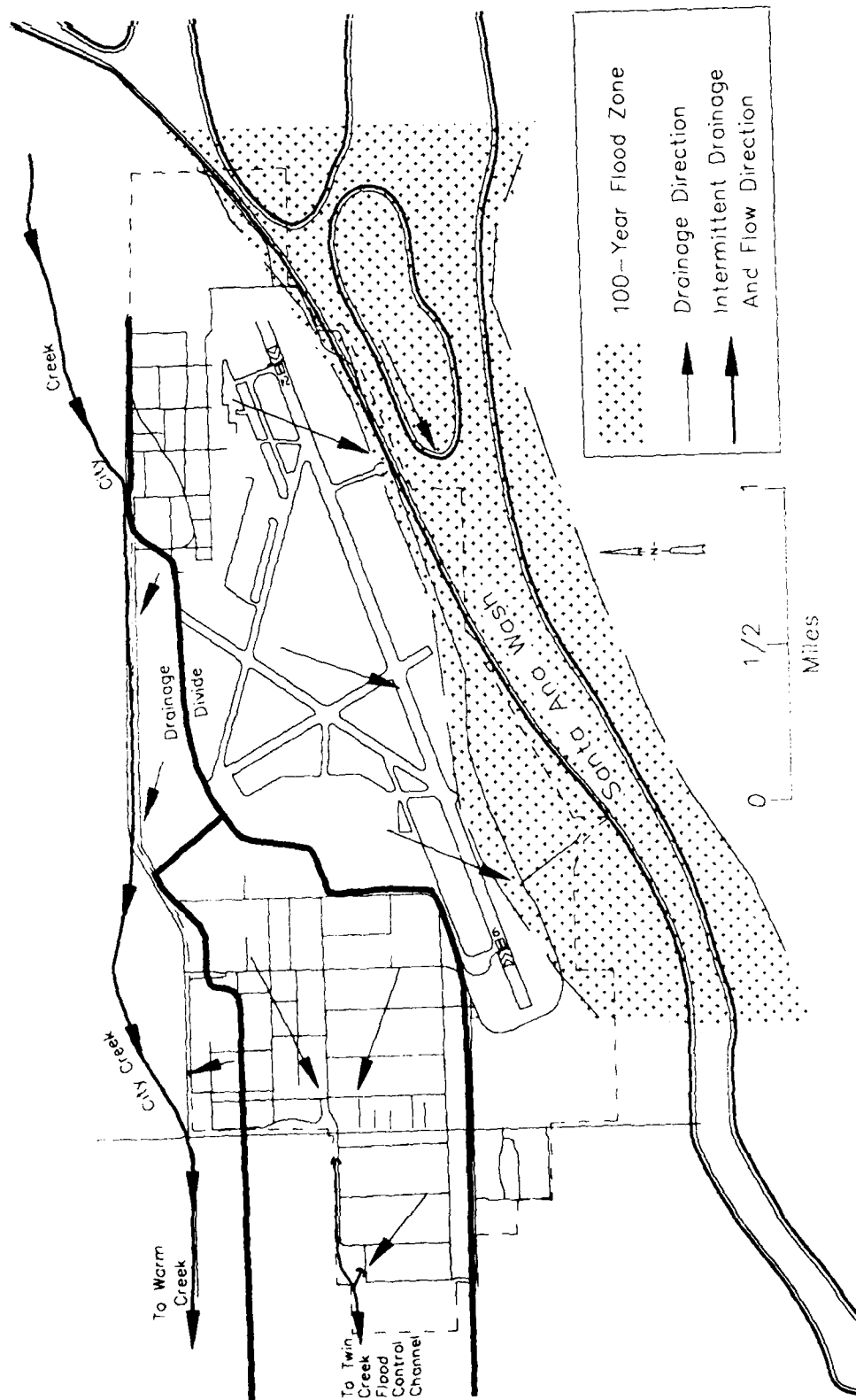
Controlled storm water drainage of the land area on Norton AFB generally consists of surface flow to diversion structures and then through collection pipes to local surface streams. There are 11 points for stormwater discharge around the boundary of the base. The point discharge that includes stormwater runoff from aircraft parking, maintenance, and servicing areas is regulated under National Pollutant Discharge System (NPDES) permit CA0002071. The point stormwater discharge that also previously included the IWTP discharge is regulated under NPDES permit CA0002062 (see Section 3.4.4.1).

The quality of surface water in the Santa Ana Basin, which comes from drainage from the crystalline terrain of the San Gabriel and San Bernardino Mountains, is generally excellent. Water from other surface sources -- drainage from the Chino Hills, Santa Ana Mountains, and San Timoteo Badlands -- contains higher concentrations of dissolved solids but, when available, is still suitable for irrigation and other beneficial uses.

## **3.3 BIOLOGICAL ENVIRONMENT**

### **3.3.1 Vegetative and Wildlife Resources**

Norton AFB lies within the Californian Chaparral complex (Hanes 1977). The natural vegetation within this complex is typically dominated by foxtail and chamise, intermingled with wild oats, manzanita, ceanothus, and scrub oak. However, the vegetation at Norton AFB has been altered by past and ongoing construction, maintenance, and operational activities. Most of the vegetated areas are mowed and



**FIGURE 3.8 Surface Hydrology in the Norton APB Area (Source: Adapted from Engineering Science 1982)**

actively landscaped: little or no natural habitat remains. Landscaping on base includes a variety of shrubs and trees such as oleander, elm, mulberry, eucalyptus, Mexican fan palm, and California oak. Appendix C provides a list of plants that can be found on the natural and maintained areas at Norton AFB.

Mammals common to the habitat at Norton AFB include desert cottontailed rabbit, blacktailed rabbit, pocket gopher, ground squirrel, weasel, and deer mouse. Common bird species are meadowlark, gull, raven, crow, and starling. Reptiles that may be found on the base include rattlesnakes and horned lizards.

Several small ponds exist on the base; mallards, pintails, and coots have been observed using them. See App. C for a list of birds that have been observed at Norton AFB.

The Santa Ana River lies along Norton AFB's south and southeastern boundary; hence, part of the Santa Ana River floodway encroaches onto the south eastern portion of the base. Because the flow of the Santa Ana River is intermittent, fish and amphibians are not found in the area near Norton AFB.

### 3.3.2 Threatened and Endangered Species

The only federally listed threatened or endangered animal species known to occur near Norton AFB is least Bell's vireo (*Vireo bellii*). Least Bell's vireo is listed as an endangered species by both the FWS and the state of California (Harper 1989). This bird typically inhabits thickets, wood margins, and mesquite and may incidentally occur at the base.

One federally listed endangered plant that is known to occur in the floodplain of the Santa Ana River at Norton AFB is the Santa Ana River wooly-star (*Eriastrum densifolium sanctorum*). In addition, the endangered slender-horned spineflower (*Centrostegia leptoceras*) may also occur on site.

Four candidate species (as defined by FWS Category 2\*) may also occasionally occur at Norton AFB: the spotted bat (*Euderma maculatum*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), orange-throated whiptail (*Cnemidophorus hyerythrus*), and greenest tiger beetle (*Cincindela tranquebarica viridissima*). However, exact locations of these species' habitats have not been determined. MAC is arranging for an FWS survey, to take place in spring/summer 1990.

## 3.4 HUMAN ENVIRONMENT

The human environment at and surrounding Norton AFB is discussed in relation to archaeological, cultural, and historic resources; noise factors; hazardous materials; socioeconomic factors; transportation; and land use.

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\*A Category 2 species is one that existing information indicates may warrant listing but for which substantial biological information to support listing is lacking in the area.

### 3.4.1 Archaeological, Cultural, and Historic Resources

MAC, the parent command for Norton AFB, has had a long-standing agreement with the National Park Service (NPS), under which the NPS provides technical advice. MAC received the NPS management recommendations for Norton AFB prior to the announcement regarding closure; MAC has asked the NPS to reevaluate its recommendations (for surveys, etc.) so that they reflect the effects of closure. As soon as those recommendations are available, MAC will use them as a basis for a formal consultation with the SHPO.

Based on the NPS recommendations to date, MAC expects to accomplish a survey of historic archaeological sites, with a lesser possibility of a prehistoric survey. Because of the NPS concerns regarding the potential significance of the World War II facilities on Norton AFB, these facilities are being evaluated under an ongoing DOD study. The study is being accomplished in accordance with a programmatic memorandum of agreement (PMOA) between the Advisory Council on Historic Preservation, National Council of State Historic Preservation Officers, and DOD.

A search of archaeological records for Norton AFB disclosed a survey, by non-Air Force sources, of part of the base. That survey revealed four historical archaeological sites located in the refuse disposal area (Ross 1989). In addition, further investigation is pending for four other sites; however, historical maps suggest that 21 other archaeological sites may be located on the base. Subsequent Air-Force-sponsored investigations will determine whether any sites are significant enough to be on the *National Register of Historic Places*.

### 3.4.2 Noise

Noise levels resulting from existing aircraft operations at Norton AFB have been estimated as part of the Air Force Air Installation Compatible Use Zone (AICUZ) program. The AICUZ program is designed to provide updated information on the flight operations of the base, as well as land use compatibility guidelines, to assist local community planning efforts in dealing with the impacts of these operations. Estimated noise levels from aircraft using Norton AFB were most recently updated in 1987. This Norton AFB AICUZ report is available from the 63rd MAW Public Affairs Office, Norton AFB, upon request.

The AICUZ program uses various types of information to estimate noise levels, including types of aircraft, flight patterns, power settings, number of flight operations, and time of day or night. This information is used in the computer model NOISEMAP 5.2. The output of this analysis is expressed in terms of the day-night average sound level (Ldn) (see App. D).

The Ldn value represents the adjusted 24-hour average sound level, in decibels, for the period from midnight to midnight. The adjustment involves addition of 10 dB to sound levels occurring during the night (from 2200 to 0700 hours) to account for increased sensitivity to noise during normal sleeping hours. The EPA has adopted Ldn as the standard measure for estimating noise impacts.

Daily flight operations, the primary input data used to estimate noise levels, are summarized in Table 3.7. Figure 3.9 shows the flight tracks in the vicinity of Norton for aircraft taking off and landing at the Norton airfield. Runway 06 is used for 89.5% of the operations, and Runway 30 is used for the remaining 10.5%.

Transient aircraft uses of Norton AFB, which comprised about 45% of the flight operations in 1987, are primarily of the following types:

- Norton AFB has been designated as the principal arrival and departure airport for U.S. Army and Marine units rotating through their respective training facilities at Ft. Irwin and Twenty-nine Palms. Both commercial and Air Force aircraft are used in these transfers.
- Commercial carriers transit Norton AFB daily in their support of Air Force requirements for urgent movement of priority parts and supplies.
- In addition to the above, Norton AFB, like all other Air Force bases, frequently hosts a variety of aircraft on various missions for each of the military services.

**TABLE 3.7 Flight Operations at Norton AFB**

Aircraft	Avg. No. of Operations <sup>a</sup> per Busy Day
Assigned	
C-141	102.94
C-21	9.22
C-12	9.20
Transient	
C-130	3.90
C-5A	0.92
T-37	1.08
T-38	1.86
DC-9	2.56
B-747	0.86
K/DC-10/L-1011	0.50
Business jet	0.84

<sup>a</sup>An operation is one takeoff and one landing combined.

Source: AFESC (1989).

Brief descriptions of military aircraft currently assigned to Norton AFB are given in App. A.

The estimated noise isopleths (Ldn) surrounding Norton AFB for existing aircraft operations are illustrated in Fig. 3.10. The isopleths primarily extend outward from the base in the directions of the most frequent flight paths. The areas with estimated noise levels less than 65 dB are in general compatible with most land uses (see Table 3.8).

Residential development is discouraged in areas with estimated levels of 65-70 dB. If residential development does occur, the guidelines recommend construction designs that achieve a noise level reduction (NLR) of 25 dB. Most nonresidential land use is generally compatible with noise levels below 65 dB.

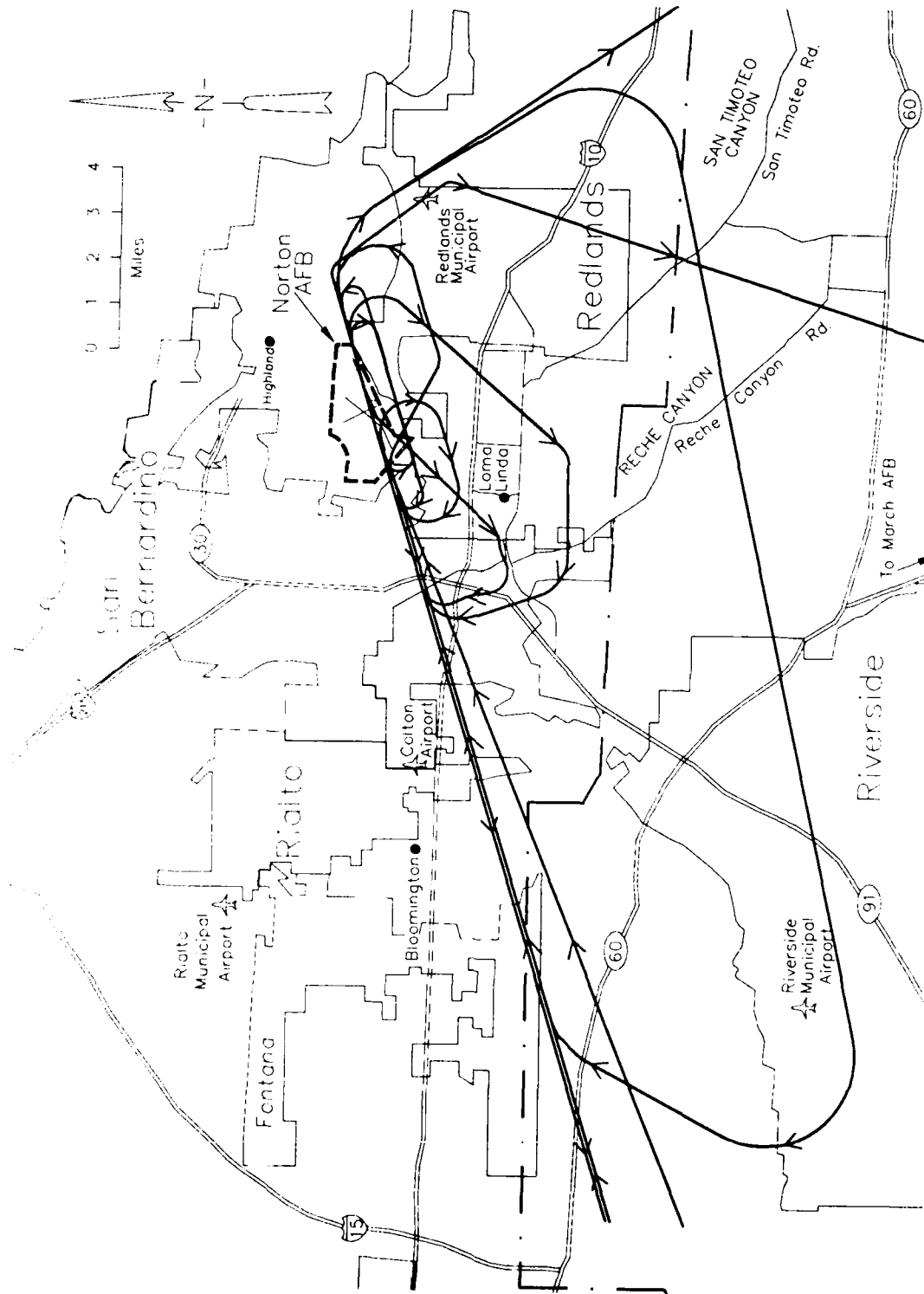
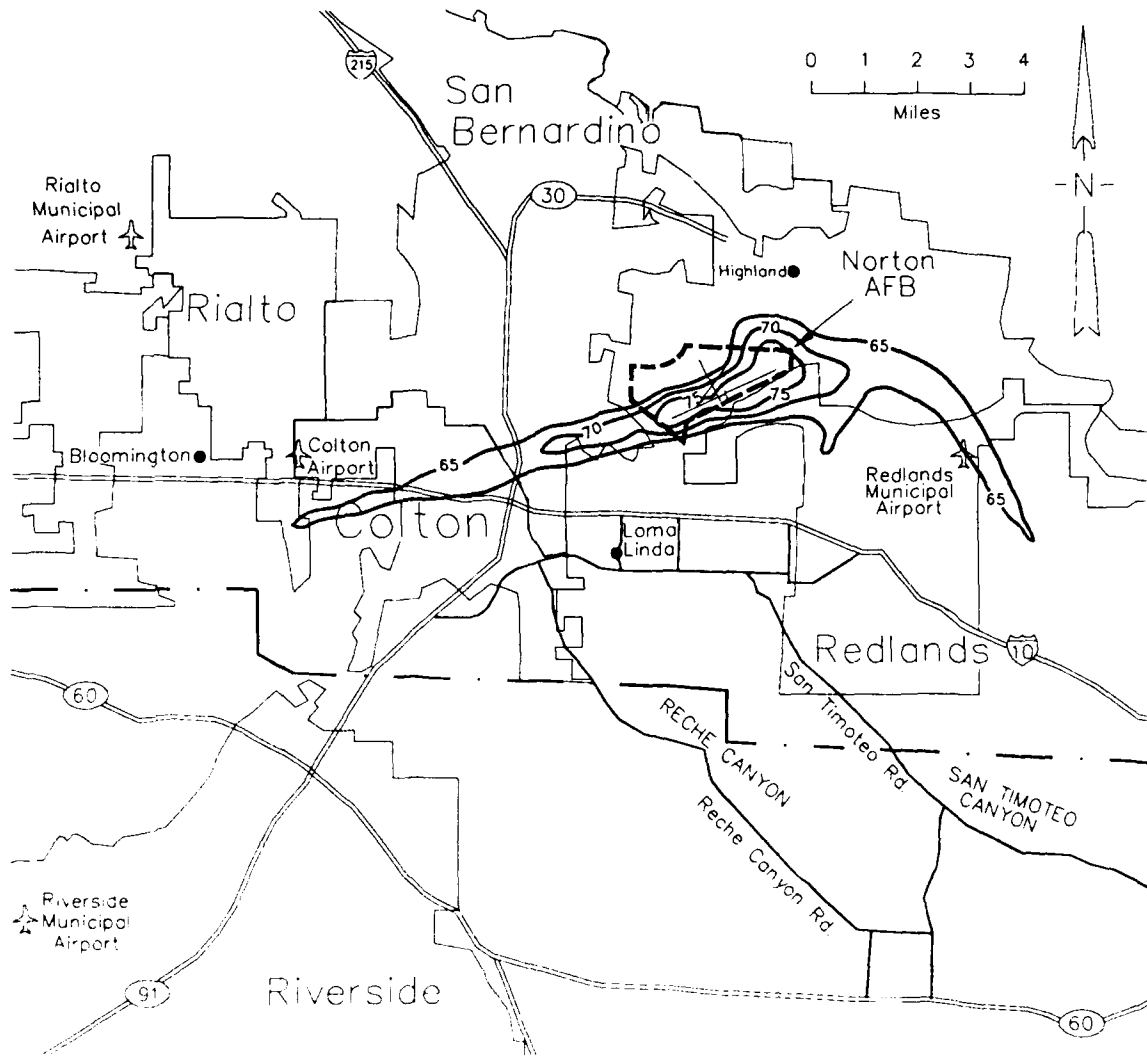


FIGURE 3.9 Flight Tracks for Aircraft Using Norton AFB (Source: Adapted from Norton AFB 1988c)



**FIGURE 3.10 Estimated Noise Isopleths (Ldn) from Aircraft Using Norton AFB**  
(Source: Adapted from Norton AFB 1988c)

For areas with estimated noise levels of 70-75 dB, which are limited to within 2 mi of Norton AFB (primarily in the direction of extensions to the main runway), the guidelines recommend additional land use limitations or inclusion of higher NLRs in building construction design.

Areas with estimated noise levels above 75 dB extend less than 1 mi from the base boundaries. These areas are incompatible with residential development; for other land uses, NLRs of 30 dB or more are recommended for buildings where the public is received, where office areas are located, or where the normal noise level is low.

The municipalities surrounding Norton AFB regularly submit zoning proposals to the Norton AFB community planning office for review. Recommendations on zoning that

**TABLE 3.8 Summary of Land Use Compatibility Guidelines**

Land Use Category	Guideline for Use of Area with Given Ldn Average Sound Level		
	70-75 dB	65-70 dB	<65 dB
Residential	NLR of 30 dB; use strongly discouraged	NLR of 25 dB; use discouraged	Compatible
Industrial/manufacturing	Compatible; NLR of 25 dB required for public areas	Compatible	Compatible
Transportation, communication, and utilities	Compatible; NLR of 25 dB required for public areas	Compatible	Compatible
Commercial retail trade	NLR of 25 dB	Compatible	Compatible
Cultural, entertainment, and recreation	Varies depending on specific use	Compatible	Compatible
Resource production and extraction	Compatible	Compatible	Compatible
Personal and business services	NLR of 25 dB	Compatible	Compatible

Source: Norton AFB (1988c).

are compatible with noise guidelines are then provided to municipalities by Norton AFB. This process has successfully avoided most major conflicts with noise level zoning constraints. Some residential and commercial development has occurred within the 65- to 75-dB isopleths. The extent to which these developments follow the NLR guidelines (Table 3.8) is not known.

### **3.4.3 Aircraft Safety Factors**

#### **3.4.3.1 Accident Potential Zones and Building Height Limitations**

The AICUZ program provides information on the relative potential for accidents in areas surrounding Norton AFB involving aircraft using the base. Air-Force-wide data for 658 aircraft accidents during the period 1968-1980 showed the areal distribution of

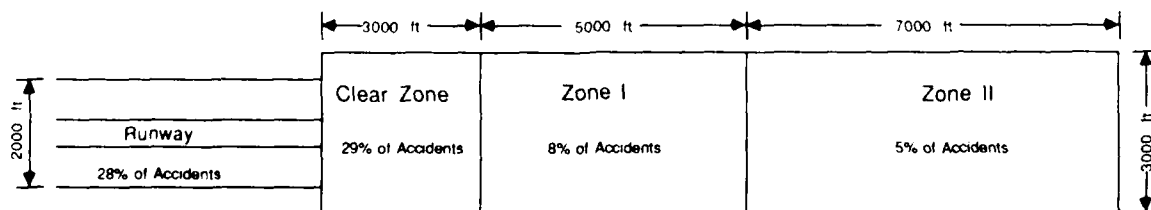
accidents given in Fig. 3.11. Seventy percent of the accidents in this data base occurred in areas within 1,000 ft of the side of runways or in an area 3,000 ft wide extending 15,000 ft beyond the end of the runway. To ensure that incompatible land uses could not occur within the clear zone, the area of greatest noise and safety hazard, the Air Force acquired property rights to the clear zone acreage. The defined accident potential zones (APZs) project the accident potential relative to other zones but do not project the probability for an accident to occur. Also, the accident statistics are for all Air Force aircraft and are not specific to Norton AFB aircraft.

Based on these data, land use zones are defined in the vicinity of airfields as shown in Fig. 3.11 and illustrated for Norton AFB in Figs. 3.12 and 3.13. The land use compatibility guidelines for these zones are given in Table 3.9. Except for agriculture, fishing, or forestry activities requiring only low labor intensity, the clear zone is to remain undeveloped (Fig. 3.12). (The three clear zone parcels outside the Norton AFB boundaries are covered by perpetual cut-to-ground easements, which are owned by the Air Force.) The Air Force recommends that residential development not occur in either APZ I or II (Fig. 3.13). The recommendations, however, suggest that development of other activities in APZ I and II may occur on a selected basis depending primarily on densities of structures and people. The development in the vicinity of Norton AFB includes some deviations from the APZ recommendations.

The Air Force has established criteria on height limitations of structures in areas surrounding the runway at Norton AFB. Figure 3.14 illustrates the region, extending up to 9.5 mi (50,000 ft) from the ends of the runway and 8.4 mi (44,500 ft) laterally, in which the height of structures is limited to 500 ft or less to avoid obstructing incoming or departing aircraft. Details of the specific height limitations in this area are given in Fig. 3.15.

#### 3.4.3.2 Bird Aircraft Strike Hazard (BASH)

There is a wide variety of bird species in the vicinity of Norton AFB; however, there have been few bird strikes. One area of concern is a municipal landfill located less than one-half mile from the Norton AFB runway; the landfill is the most significant attractant in the area. There has been some increase in bird activity near Norton AFB.



**FIGURE 3.11 Statistical Distribution of Air-Force-Wide Accidents near Airfields (1968-1980) (Source: Adapted from Norton AFB 1988c)**

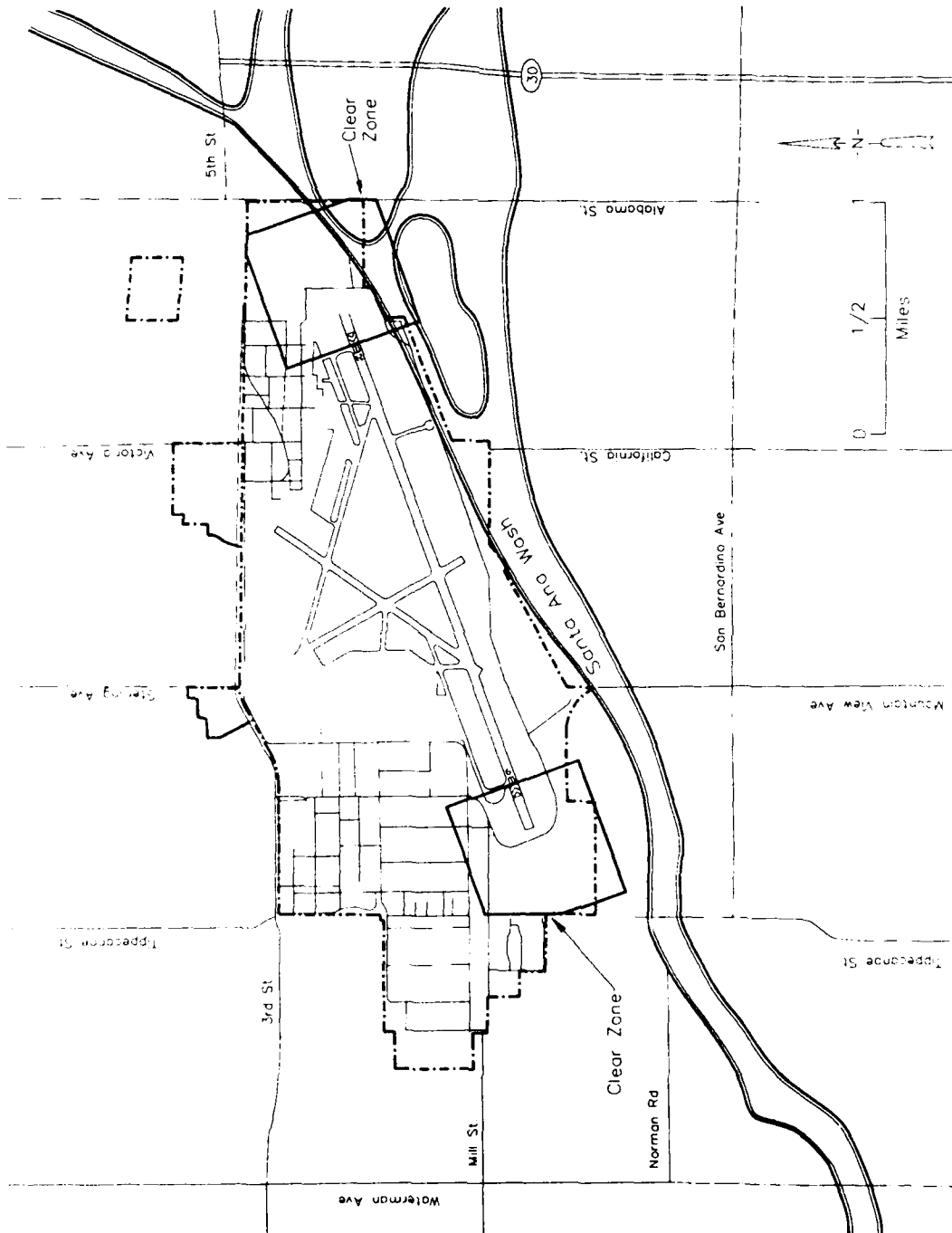
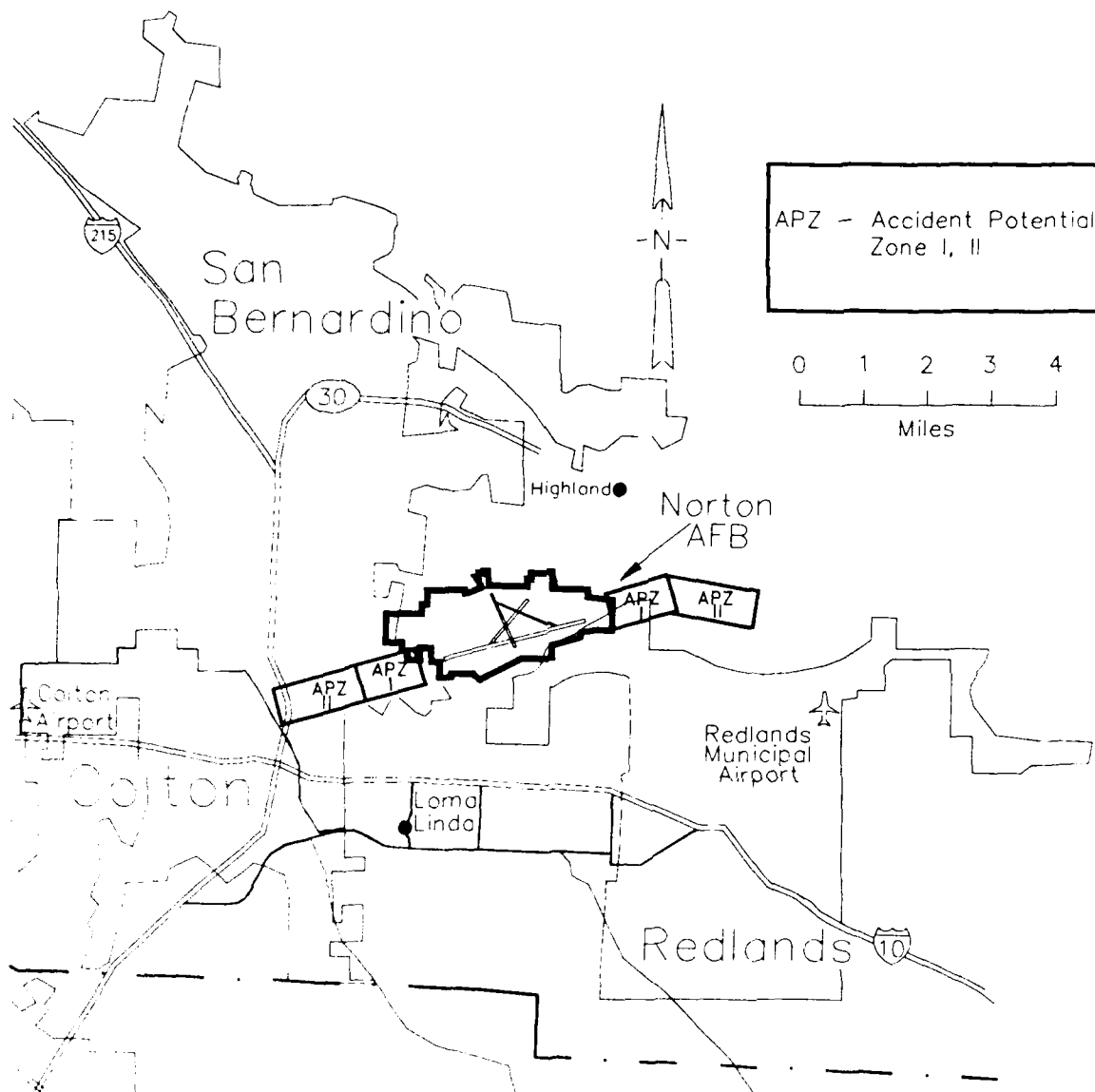


FIGURE 3.12 Clear Zones near Norton AFB (Source: Adapted from Norton AFB 1988c)



**FIGURE 3.13 Accident Potential Zones near Norton AFB (Source: Adapted from Norton AFB 1988c)**

Whether the population increase is due to changes in the landfill operation, local land uses, weather patterns, or a combination of factors is unknown. Norton AFB has developed a BASH plan to promote safe flying operations in spite of bird problems that may develop. This plan:

- Establishes a Bird Hazard Working Group,
- Determines operating procedures to avoid high-hazard situations,

**TABLE 3.9 Summary of Accident Potential Zone Land Use Compatibility Guidelines<sup>a</sup>**

Land Use Category	Compatibility of Use Category with APZ		
	Clear Zone	Zone I	Zone II
Residential	I	I	I
Industrial/manufacturing	I	I <sup>b</sup>	C <sup>h</sup>
Transportation, communication, and utilities	I	C <sup>c</sup>	C
Commercial retail trade	I	I <sup>b</sup>	C <sup>b</sup>
Services I	I <sup>b</sup>	C <sup>b</sup>	
Cultural, entertainment, and recreation	I	I <sup>b</sup>	I <sup>b</sup>
Resource production and extraction	I	C	C

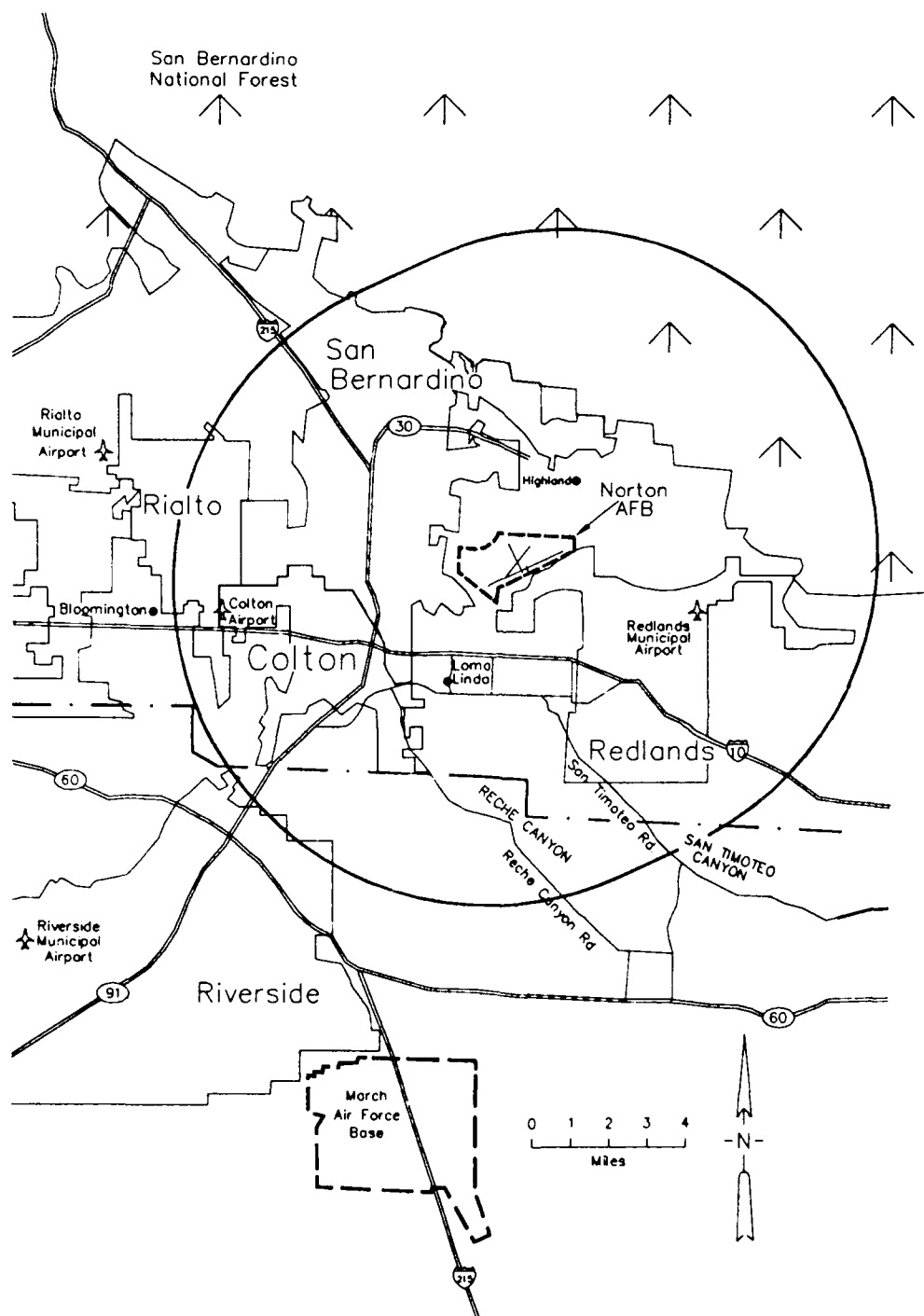
<sup>a</sup>Meanings of alphanumeric entries are as listed below. Compatibilities listed are general; within a category, they may vary.

- I - Incompatible: the land use and related structures should be prohibited.
- C - Compatible: the land use and related structures are compatible without restriction.

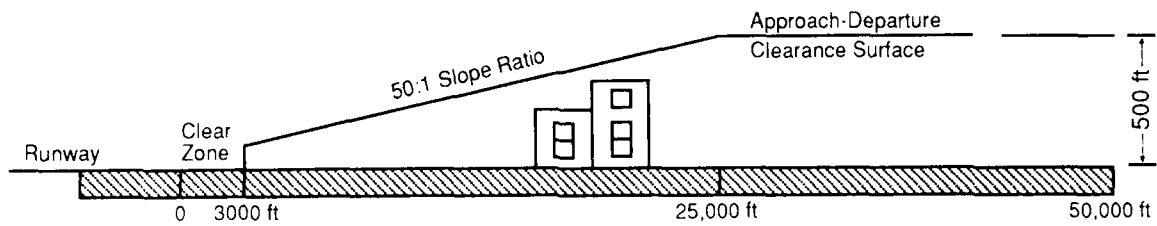
<sup>b</sup>Compatibility can be affected by variations in population and structure density for this land use category.

<sup>c</sup>Passenger terminals and major aboveground transmission lines are prohibited.

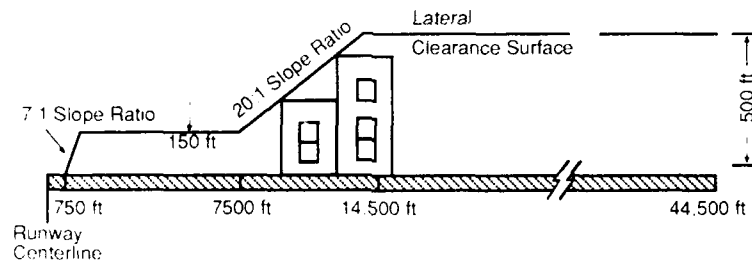
Source: Norton AFB (1988c).



**FIGURE 3.14 Regions near Norton AFB with Limits on Structure Height (≤500 ft above runway elevation) (Source: Adapted from Norton AFB 1988c)**



(a) along extensions of the runway (the clearance surface is 200 ft wide at the runway end and expands uniformly to 16,000 ft wide at 50,000 ft)



(b) laterally from the sides of the runway

FIGURE 3.15 Limitations on Structure Height near the Norton AFB Runway (buildings depicted are hypothetical) (Source: Adapted from Norton AFB 1988c)

- Provides for dissemination of information to all assigned and transient aircrews on procedures for bird avoidance, and
- Decreases the attractiveness of the airfield to birds by eliminating, controlling, or reducing environmental factors that support the birds.

Norton AFB is also investigating different types of bioacoustics and pyrotechnics to stock should a bird problem develop and harassment be the most appropriate control method.

### 3.4.4 Hazardous Materials

#### 3.4.4.1 Management of Hazardous Materials and Hazardous Waste

As part of its various current activities, Norton AFB generates materials that have been designated as hazardous wastes under RCRA (as outlined in 40 CFR Parts 261-265) and the state code (22 CAC 4, Chapter 30). Currently, the state of California has been authorized by EPA to implement the federal program as modified by its own

TABLE 3.10 Estimated Hazardous Waste Generation at Norton AFB, by Units that Would Relocate (gal/mo)

Generator	Paint Waste	Sol- vent <sup>b</sup>	Pro- cess Chem.	Alco- hol	Vehicle Anti- freeze	Pro- cess Oil	Batt. Acid	Used Petroleum Products <sup>a</sup>		
								Fuel	Oil	Sol- vent <sup>b</sup>
63rd Military Airlift Wing										
Operations	0.2	0.1		5.0						
63rd Avionics Maint. Squad.	1.0	71.8		0.9			125.0	4.0		3.0
63rd Field Maint. Squad.	477.1	719.6	70.0	0.8	45.8	36.7		33.0	1,084.0	533.0
63rd Org. Maint. Squad.	5.0	44.4								
63rd Supply Squad.		2.6		1.3						
63rd Transportation Squad.	12.5	9.2								
63rd Aerial Port Squad.	0.7	22.9			4.2					
63rd Air Base Group										250.0
Administration		25.0	7.5							
63rd Civil Eng. Squad.	17.0	9.3		0.1					9.0	42.0
63rd Security Police Squad.		1.0								
1965th Communications Squad.	1.0	4.9			13.8				37.0	
AAF Exchange Service					8.4				101.0	

<sup>a</sup>Does not include estimated quantities of hazardous waste processed through the base's IWTP: 3,250 gal/mo fuel, 311 gal/mo oil, and 400 gal/mo solvent.

<sup>b</sup>Solvents are estimated under Used Petroleum Products and separately in the source. The extent of overlap in these entries has not been determined.

Source: 63rd ABG (1989).

**TABLE 3.11 Summary of Estimated Hazardous Waste Generation by Norton AFB Units that Would Relocate**

Hazardous Waste	Quantity Generated (gal)		
	Monthly	Quarterly	Annually
Paint waste	515	1,545	6,180
Solvent	911	2,733	10,932
Process chemicals	78	234	936
Alcohol	8	24	96
Vehicle antifreeze	72	216	864
Process oil	37	111	444
Battery acid	125	375	1,500
Used petroleum products <sup>a</sup>			
Fuel	33	99	396
Oil	1,235	3,705	14,820
Solvent	828	2,484	9,936

<sup>a</sup>Excludes waste processed through the IWTP.

Source: 63rd ABG (1989).

regulations, which are more stringent than the federal requirements. These regulations require that the hazardous wastes be handled, stored, transported, disposed of, or recycled according to defined procedures. Norton AFB has incorporated these procedures in a Hazardous Waste Management Plan, which is applicable to all activities.

The estimated annual quantity of these hazardous wastes generated and requiring disposal is about 21,000 gal/year, plus an additional 25,000 gal/year of used petroleum products. Used petroleum products are regulated by California as hazardous wastes but are regulated by name under RCRA. Tables 3.10 and 3.11 provide estimated quantities of hazardous wastes currently generated by units moving from the base. Table 3.12 lists the sites on base where the on-hand amounts of usable (nonwaste) hazardous materials or oil products equal or exceed reportable spill quantities, and Fig. 3.16 shows their location on the base. Table 3.13 lists the hazardous waste accumulation points.

The waste collection at designated accumulation points is primarily in labeled 55-gal drums. Some hazardous wastes are also collected on the flight line using mobile bowsters\* that have been labeled for the collection of various specific types of wastes. Additionally, some wastes are disposed of and treated through the base IWTP.

\*Trailer-mounted tank, typically having a 750-gal capacity.

**TABLE 3.12 Facilities at Norton AFB with Stored Hazardous Substances<sup>a</sup>**

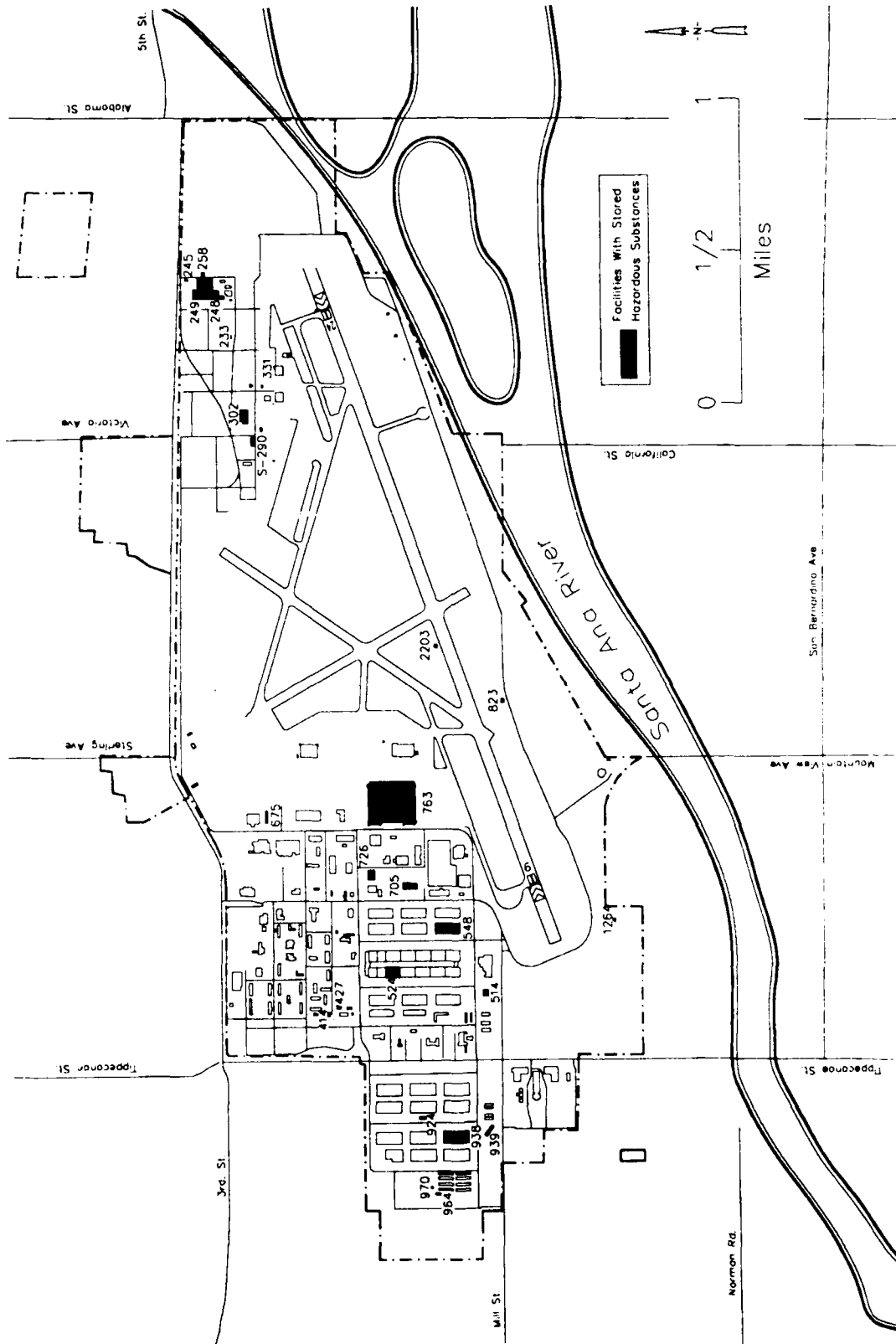
Fac- ility	Hazardous Substance Stored <sup>b</sup>
233	Contaminated JP-4 <sup>c</sup>
245	Photoprocessing chemical wastes (including sodium thiosulfate)
248	Persulfate and thiosulfate photoprocessing chemicals
249	Waste oil
258	Segregated oxidizers and flammables
302	Waste fuel (mostly JP-4)
331	Waste motor oil
414	Rodenticide, insecticide, and herbicide (dry and liquid)
427	Muriatic acid (stored in 1-gal plastic containers)
514	Various substances
524	Ammonium hydroxide (in camera room), photochemical bleach, fixer and neutralizer (in Art Services)
548	Various substances
675	Engine oil, lube oil, antifreeze, paint, thinner, solvent, waste fuel
705	Lube oil, hydraulic fluid, motor gasoline
726	JP-4
763	Thinner, lube oil, trichloroethane, dry cadmium, waste paint
823	JP-4
924	Triethyl borane (a pyrophoric liquid)
938	Denatured alcohol, acetone, paint, gasoline, lithium batteries
939	Lubricant, hydraulic fluid, thinner, cleaning compound
964	Various chemicals and compounds
970	Polychlorinated biphenyls
1264	Oil sludge, various chemicals
2203	JP-4

<sup>a</sup>Table includes those sites with a potential for spills of reportable quantities, as defined by 40 CFR Parts 110, 112, and 117; CERCLA; and applicable state regulations.

<sup>b</sup>Oil is listed as a hazardous substance because California regulations define it as such.

<sup>c</sup>JP-4 is a jet engine test fuel composed of about 35% light petroleum distillates and 65% gasoline distillates.

Source: 63rd ABG (1986).



**FIGURE 3.16** Locations of Stored Hazardous Substances at Norton AFB (Source: Locations from 63rd FMS 1989)

**TABLE 3.13 Hazardous Waste Accumulation Points at Norton AFB**

Facility	Location in Facility
341	Outside (NW, fenced area)
675	Inside at northwest corner
726	Outside at south side
763	Plating shop
763	Pneudraulics shop
763	Nondestructive inspection shop
763	Outside at southwest corner
763	Outside at southeast corner
Other	Northwest corner of flightline, next to aircraft parking area D-7

Source: 63rd FMS (1989).

Generators of hazardous waste at Norton AFB are required to provide a complete breakdown of the contents of the hazardous waste submitted for recycling or disposal. If the waste composition is unknown, sampling and analysis is conducted by the base Bioenvironmental Engineering Services to establish the composition.

Jet fuel (JP-4) that has been contaminated is also treated as hazardous waste. "Contaminated" fuel is usually contaminated with water or some other substance that makes it unsafe for use as jet fuel but is not highly toxic. However, an attempt is made to recycle JP-4 fuel waste on base as fuel for aircraft or aerospace ground equipment (AGE) or in fire training, depending on the contaminant level.

The Norton AFB pest management program is conducted in accordance with DOD guidelines. The MAC Entomologist provides professional oversight for the Norton AFB program through biennial on-site pest management reviews, annual approvals of base pesticide products listed in the Pest Management Plan, and quarterly reviews of actual pesticide use. The base pest management program is conducted under the day-to-day supervision of DOD-certified pesticide applicators. There is no known history of pesticide environmental contamination on Norton AFB. Finished pesticide spray materials are either used up in process or are used to supplement diluent for additional spray applications. Pesticides do not generally contribute to Norton AFB's hazardous waste generation. Appendix A contains a list of herbicides and other pesticides that are currently used at Norton AFB as part of support operations for units to be withdrawn.

Wastes handled through the IWTP include liquid wastes resulting primarily from aircraft washdown. These wastes, estimated at 66,000 gal/day, are transported to the IWTP primarily through a separate collection system. Additional wastes from maintenance, electroplating, and painting are also treated. These wastes are transported to the IWTP primarily in 55-gal drums by truck.

Until recently, the water effluent from the IWTP was discharged to the Santa Ana River under an NPDES permit (No. CA0002062) issued by the California Regional Water Quality Control Board, Santa Ana Region. The IWTP now discharges to a percolation pond inside the base near the IWTP, and an application has been submitted for a Facility Permit/Waste Discharge to replace the NPDES permit.

Most hazardous wastes collected at a cumulation points are turned in to the Defense Logistic Agency's Defense Reutilization and Marketing Office (DRMO) facilities located at Norton AFB (Buildings 964 and 970). A disposal turn-in document must be prepared for all materials when they are transferred to DRMO.

DRMO has the responsibility to dispose of the received hazardous waste according to the regulatory guidelines. DRMO has an interim (Part A) permit for storage of the hazardous waste. Some hazardous waste is disposed of by Norton AFB directly through contract with approved disposal firms. Transferring the hazardous waste responsibility to off-site disposal contractors, either by the DRMO or Norton AFB, includes the preparation of manifests, copies of which must be signed and returned to the point of origin after the waste is disposed of or recycled.

According to the management plan, each organization generating or storing hazardous waste is required to ensure that all personnel who manage or handle wastes receive annual training with regard to safe procedures for carrying out their responsibilities.

Norton AFB has developed and implemented a Spill Prevention Response Plan that fulfills the requirements for a Spill Prevention, Control, and Countermeasures (SPCC) plan and an Oil and Hazardous Substance Pollution Contingency (OHSPC) plan. The plan identifies procedures to be followed, equipment to be readily available, persons responsible, material data safety sheets, and other information for preventing or containing spills of hazardous material.

#### **3.4.4.2 Polychlorinated Biphenyls (PCBs)**

Due to their low flammability and high heat capacity, PCBs have been used extensively as coolants and insulators in transformers and capacitors. Currently, 133 PCB transformers (defined as containing 500 ppm PCB or greater) and PCB-contaminated transformers (50-499 ppm PCBs) are in use at various sites at Norton AFB. In accordance with EPA regulations (40 CFR Part 761), the following actions have been taken with regard to PCBs at Norton AFB:

- All PCB liquids and PCB-contaminated items (50 ppm or greater PCBs) and out-of-service PCB capacitors that can no longer be used have been removed and disposed of according to EPA regulations.
- All in-service PCB transformers, large high-voltage PCB capacitors (greater than 3 lb PCBs), and new (since Jan. 1, 1979) small PCB capacitors have been labeled according to EPA regulations.

- All leaking PCB transformers and capacitors will be replaced by January 1, 1991.
- In-service PCB and PCB-contaminated transformers are inspected every three months, or every month if the transformer is in a high-risk area.
- An annual report on PCB dispositions is prepared and maintained by the base environmental coordinator.

The Air Force will assure that Norton AFB will be PCB-free prior to closure.

#### **3.4.4.3 Asbestos**

During World War II, extensive use was made of asbestos in the construction of buildings at Norton AFB. Friable asbestos was used to insulate steam pipes, and nonfriable asbestos can be found in floor tiles, ceilings, and outside shingles. No comprehensive survey has been conducted, however, of the extent of asbestos occurring in the site buildings. The Norton asbestos survey is projected to be completed prior to September 30, 1991.

#### **3.4.4.4 Nonhazardous Refuse**

Nonhazardous domestic and industrial refuse generation at Norton AFB is estimated at 2,060 tons/year. A local disposal company collects the refuse for disposal in an off-base sanitary landfill.

#### **3.4.5 Socioeconomics**

Socioeconomic factors, including the area economy, public utilities, transportation, recreational facilities, military and civilian retirees, and land use, are discussed below to provide a more complete description of the environmental setting.

##### **3.4.5.1 Employment and Economic Activity**

Since Norton AFB is geographically located near the border between San Bernardino and Riverside counties, it is necessary to consider both counties in the following assessment. Many Norton AFB employees live in Riverside County, and much of the economic activity associated with Norton AFB "leaks" into Riverside. In addition, many Norton AFB employees living in San Bernardino County will probably not change residences once they start reporting to March AFB in Riverside County. Thus, the following economic baseline analysis examines San Bernardino County alone and both counties combined.

The total population in the two-county study area was reported as over 2 million people at the beginning of 1987: 1,139,100 in San Bernardino and 862,000 in Riverside. According to the U.S. Department of Commerce (DOC 1988), the study area contains about 725,000 households and the average per capita income is \$12,141.

Data on the growth rates for the major economic sectors in San Bernardino County and the combined counties of San Bernardino and Riverside indicate that construction, manufacturing, and financial services have had the most steady growth in these counties during the period 1983-1987 (DOC 1989). The only sectors showing continuous decreases in activity are mining and farm production. The federal military jobs sector has experienced a very small amount of growth in recent years, both in San Bernardino County and the two-county area.

#### **3.4.5.2 Public Utilities**

The base and the housing surrounding the base receive electric service from Southern California Edison Company, a large integrated electric system serving the southern California area. According to the U.S. Department of Energy (DOE 1987), total sales to final customers in 1987 amounted to 63,494,291 MWh, with a total disposition of about 74,142,513 MWh. In 1987, Norton AFB used about 74,129.4 MWh, and the on-base housing consumed 2,606.3 MWh.

Natural gas is sold to the base by Southern California Gas Company. The total output for this company in 1987 was about 1,071.8 trillion Btu (Browns Directory 1988). Annually, the base uses 267,854 million Btu and the on-base housing accounts for 185,528 million Btu.

The Norton AFB sanitary sewer discharges into the San Bernardino Water Reclamation Department system for treatment. The Norton AFB discharge permit allows 1.0 million gal/day; the actual discharge as metered is 0.85-1.0 million gal/day (Watson 1989).

#### **3.4.5.3 Transportation**

In southern California, surface travel is mostly by highway; there is no commuter rail system. The main highways serving Norton and March AFBs are Interstates 10, 15, and 215 and State Routes 30, 60, and 91 (see Fig. 1.2). Various segments of the roads in Riverside and San Bernardino counties are characterized by traffic volumes that exceed the design volume. Tables 3.14 and 3.15 list road segments on which the volume-to-capacity (V/C) ratio exceeded 1.0 during 1984.

As a basis for evaluating the contribution to area traffic volumes of Norton AFB employees commuting to the base, the residential locational distribution of Norton AFB employees and a density map of the residential distribution are shown in Figs. 3.17 and 3.18, respectively. These data show that more than two-thirds of the base's employees live in the San Bernardino, Redlands, or Highland areas or on base.

**TABLE 3.14 Study-Area Highway Facilities Congested with a V/C Ratio between 1.0 and 1.25**

Facility	Congested Segment
<u>Riverside County</u>	
Arlington Avenue	Magnolia Avenue to Victoria Avenue
California Avenue	North Arlington to 6th Street
Indiana Avenue	Washington Street to Jefferson Avenue
I-215/Rte. 60 Freeways	Route 91 Freeway to Chicago Avenue
Milliken/Hammer Ave.	Bellegrave Avenue to Schleisman Road
Orange Street	14th Street to University Avenue
Route 91 Freeway	Route 71 Expressway to W. 6th Street
Route 91 Freeway	Hammer Avenue to I-15 Freeway
Tyler Street	Well Avenue to Hole Avenue
Van Buren Boulevard	Central Avenue to Arlington Avenue
<u>San Bernardino County</u>	
Euclid Avenue	Riverside Drive to Edison Avenue
Foothill Boulevard	Vineyard Avenue to Archibald Avenue
Grove Avenue	Foothill Boulevard to Arrow Route
Grove Avenue	Francis Street to Philadelphia Street
Highland Avenue	State Street to Muscott Street
Highland Avenue	Golden Avenue to Del Rosa Avenue
I-215 Freeway	Orange Show Road to Washington Street
Mill Street	Vernon Avenue to I-215 Freeway
Mill Street	E. Street to Tippecanoe Avenue
Milliken Avenue	Jurupa Street to Van Buren Boulevard
Mountain Avenue	19th Street to Baseline Avenue
Mountain Avenue	Foothill Boulevard to 4th Street
Sierra Avenue	I-10 Freeway to Slover Avenue
Vineyard Avenue	4th Street to I-10 Freeway

Source: SCAG (1987).

A recent survey by Commuter Transportation Services (CTS 1989) found that more than 75% of the employees of Norton AFB live within 10 mi of the base (Fig. 3.19) and that the average commuting time for about 80% of the employees is 20 min or less (Fig. 3.20). This study also indicated that 82% prefer to drive alone. Only 9% of the employees choose to car pool, and a negligible portion of the employees commute by public transportation or other modes. The incentives offered to encourage ride-sharing are few and relatively conservative. Based on the South Coast Air Quality Management District calculation, the average vehicle ridership (AVR) of Norton employees is 1.06.

Table 3.16 provides estimates of the number of daily commuter vehicle trips to Norton AFB (No. of employees living in the area/AVR) from eight locations in the study

**TABLE 3.15 Study-Area Highway Facilities Congested with a V/C Ratio of 1.25 or Greater**

Facility	Congested Segment
<u>Riverside County</u>	
Alessandro Boulevard	Trautwein Road to Frederick Street
Etiwanda Avenue	Route 60 Freeway to Route 91 Freeway
Hamner Avenue	Schleisman Road to 6th Street
Railroad Street	Smith Avenue to W. Grand Boulevard
Route 71 Expressway	Euclid Avenue to Route 91 Freeway
Van Buren Boulevard	Limonite Avenue to Central Avenue
Victoria Avenue	14th Street to University Avenue
Watkins Drive	I-215 Freeway to Nisbet Way
<u>San Bernardino County</u>	
Central Avenue	Kingsley Avenue to Holt Avenue
Central Avenue	Route 60 Freeway to Walnut Avenue
Church Street	Baseline Street to Railroad Street
Grove Avenue	6th Street to Holt Boulevard
Highland Avenue	E Street to Golden Avenue
Milliken Avenue	Airport Drive to Jurupa Street
Sultana Avenue	6th Street to 4th Street
Vineyard Avenue	I-10 Freeway to D Street

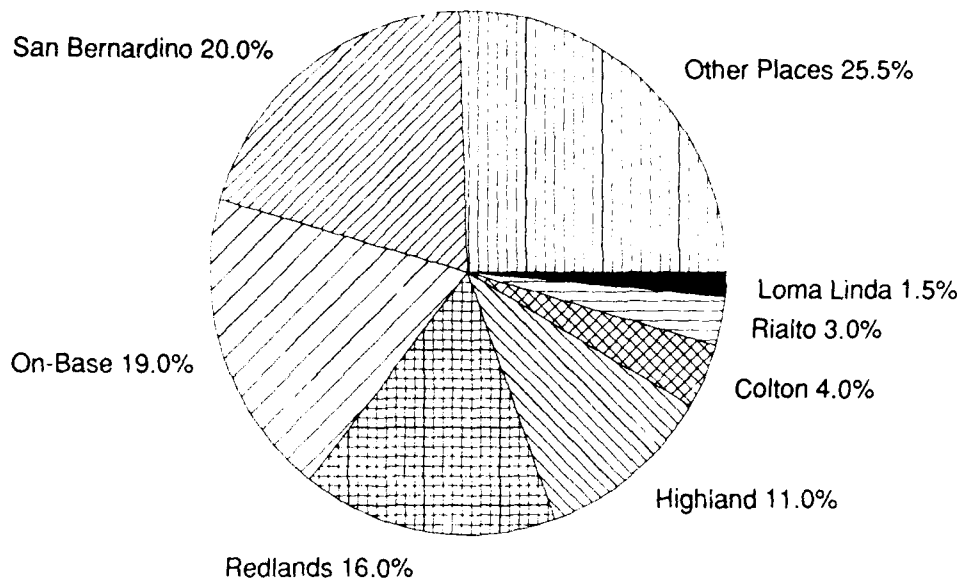
Source: SCAG (1987).

area. On weekdays, more than 65% of the employees arrive at the base during the peak hour (7:00-8:00 a.m.).

The total number of trucks, flatbeds, and tractor/trailer vehicles that travel to Norton AFB is about 250 vehicles per day; these are assumed to travel to Norton AFB from outside the 10-mi radius discussed above.

#### **3.4.5.4 Recreational and Support Resources**

The armed forces have always had a commitment to developing recreational and support facilities on their bases; Norton AFB is no exception. Table 3.17 lists the recreational facilities found on base. On-site support services include a library branch, financial management branch, barber shop, catering service, ticket and tour office, art/crafts sales shop, thrift shop, golf course, and child development center.



**FIGURE 3.17 Distribution of Norton AFB Employee Residences, by Community (Source: Adapted from CTS 1989)**

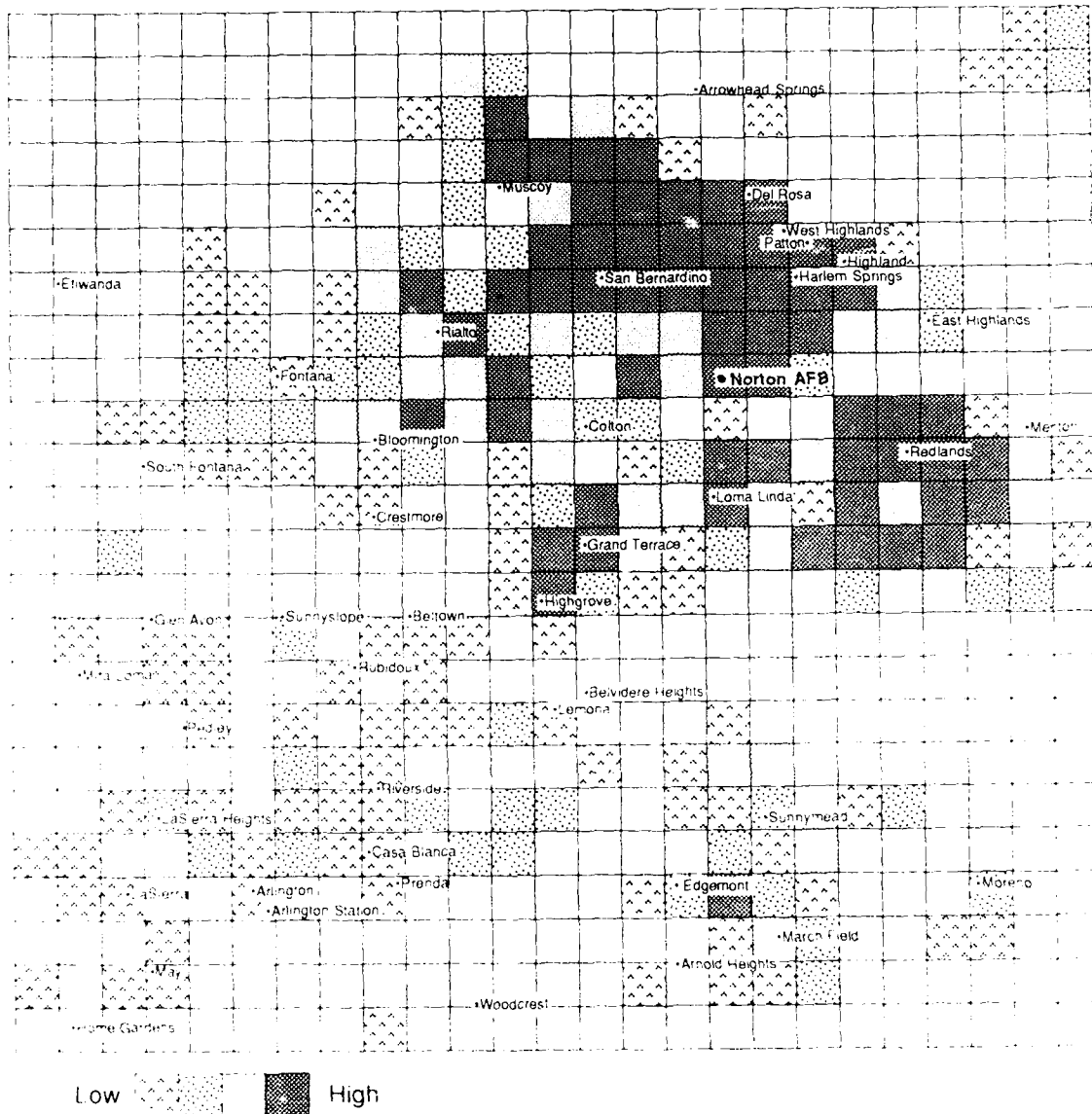
Existing recreational facilities that can be found outside the base include a state urban recreational area, community parks, public golf courses and swimming pools, and museums.

#### **3.4.5.5 Military and Civilian Retirees**

About 10,074 military retirees live within 50 mi of Norton AFB. These are retirees from the Army, Navy, Marines, National Guard, Reserves, and Air Force who rely on the base for health, financial, shopping, and recreational services. In addition to the recreational facilities discussed above, retired military personnel use the following facilities at Norton AFB:

- USAF Clinic Norton, in particular for outpatient medical, dental, and pharmaceutical services;
- Credit Union,
- Base Exchange, and
- Commissary.

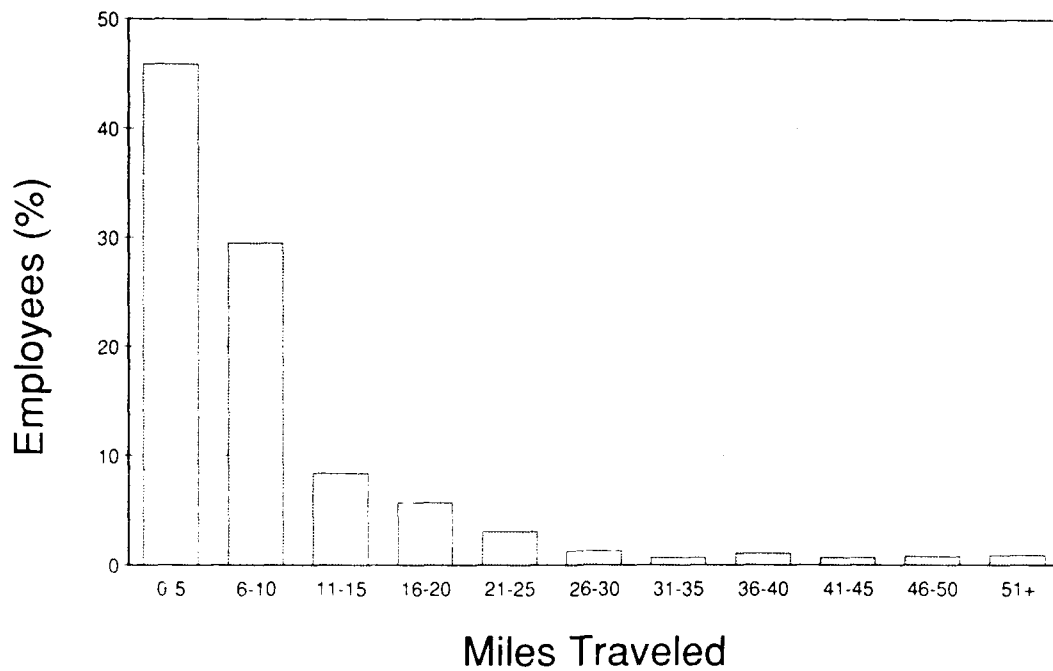
Civilian retirees have the option to use morale, welfare, and recreation facilities and the Credit Union.



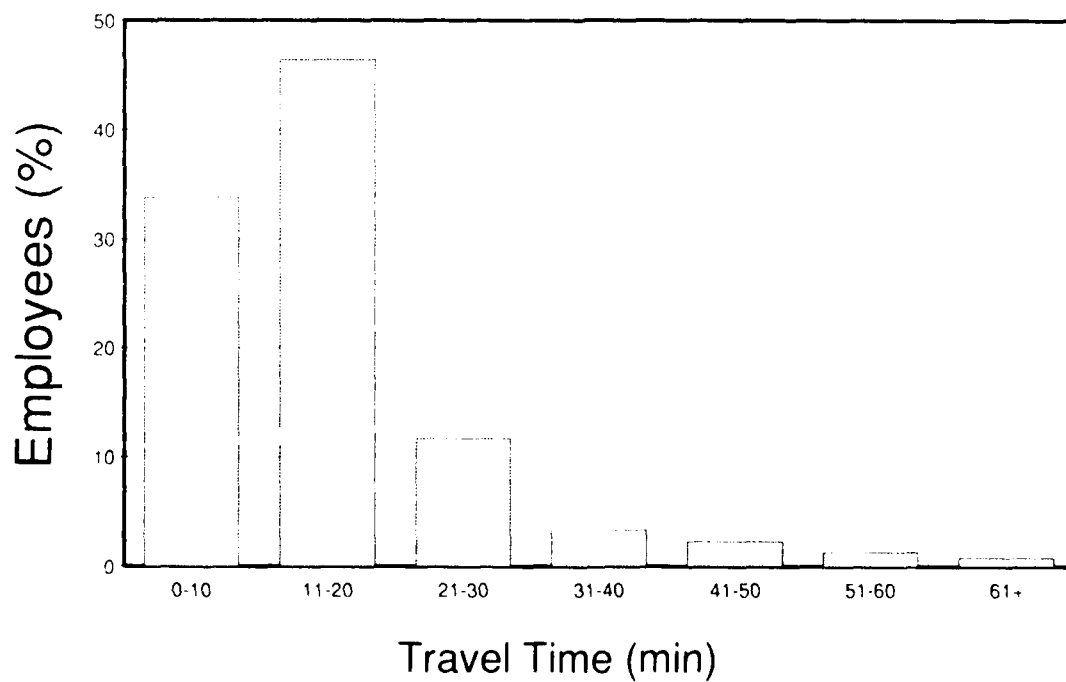
**FIGURE 3.18 Density Map for Norton AFB Employee Residences (Source: Adapted from CTS 1989)**

### 3.4.5.6 Land Use

The land surrounding Norton AFB is zoned for a variety of residential, commercial, and industrial uses (Environmental Public Works Agency 1989). The residential areas primarily consist of single-family detached dwellings in subdivisions with schools, while commercial uses are made up mostly of governmental, business, or professional buildings; medical offices or clinics; hotels; and supermarkets. Industrial uses in the area consist of storage yards, industrial plants, and motor and rail terminals. The principal communities that surround the base are Highland, Loma Linda, Redlands, and San Bernardino.



**FIGURE 3.19** Commuting Distance for Norton AFB Employees (Source: Adapted from CTS 1989)



**FIGURE 3.20** Average Commuting Time for Norton AFB Employees (Source: Adapted from CTS 1989)

**TABLE 3.16 Estimated Daily Commuter Trips to Norton AFB from Regional Locations**

Location	% of Employees	No. of Employees	No. of Trips
On base	19	1,202	1,133
San Bernardino	20	1,265	1,193
Redlands	16	1,012	954
Highland	11	695	655
Colton	4	253	238
Rialto	3	190	179
Loma Linda	1.5	100	94
Other	25.5	1,612	1,520

Source: CTS (1989).

**TABLE 3.17 Recreational Facilities Located on Norton AFB**

Recreational Facility	Building or Area
Picture Framing	302
Auto Hobby Shop	302
Bowling Center	190
Ceramics Craft Shop	302
Galaxy Swimming Pool	178
Recreation Center	24
Palm Meadow Golf Course	818
Golf Pro Shop	818
Starlifter Swimming Pool	142
Wood Craft Shop	302
Youth Center - Teen Club	615
Sports and Fitness Center	182
Child Development Center	24
Library	125
Equipment Rental	655
NCO Club	48
Officers Club w/Pool	S-7
Golf Snack Bar and Lounge	817
Picnic Area and Playground	2
Softball Fields (four)	
Tennis Courts (ten)	
1/4-Mile Jogging Track	

Source: Norton AFB staff.

In areas to the northeast and southwest of Norton AFB, along the take-off and landing flight tracks, some residential and commercial development is incompatible with AICUZ recommendations (see Sections 3.4.2 and 3.4.3).

The Santa Ana River forms the south and southeast perimeter of the base. Otherwise, the base is completely surrounded by residential communities. Several small ponds occur on the site, specifically within the golf course and adjacent to the Santa Ana River. These ponds are man-made.

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## 4 ENVIRONMENTAL CONSEQUENCES

This section discusses the impacts of the base closure on the existing environment described in the previous section, including the physical, biological, and human environments. Because the Base Realignment and Closure Act requires implementation of the closure/realignment, "no action" is not an alternative. However, Chapter 3 presents the environmental conditions associated with Norton AFB and its operations. For the purposes of this analysis, these conditions represent the baseline against which the implementation impacts were judged.

### 4.1 PHYSICAL ENVIRONMENT

#### 4.1.1 Earth Resources

##### 4.1.1.1 Installation Restoration Program

As part of the DOD IRP, 22 sites at Norton AFB have been identified and evaluated as possibly requiring restoration due to contamination from previous activities (see Section 3.2.1.2). Although restoration of these sites is a necessary consideration before the sites can be offered for reuse, the activities related to the withdrawal of units from the base will not directly affect the IRP sites. Activities that could further contaminate these sites have already been discontinued.

The Air Force has committed to completing the restoration of contaminated sites at Norton AFB through the process of an Interagency Agreement (IAG), which was signed June 29, 1989, by the Air Force, the California Department of Health Services, and EPA Region IX. The Air Force commitment to this agreement is independent of the future status of Norton AFB; thus, the timely implementation of its features should not be affected by the withdrawal process.

Potential indirect impacts on the IRP of the withdrawal that have been considered in this assessment are the possibilities that the realignment of Air Force manpower will (1) lead to increased exposure to the contaminated sites or (2) adversely affect active containment of the contamination.

Endangerment assessments conducted for the IRP sites indicated health risks from groundwater contamination if the contaminated groundwater were to be used for drinking water, or if the contamination plume reached existing drinking wells in the area. A reduction in the number of persons using the groundwater as a source of drinking water thus is a possible positive impact from the withdrawal of units from Norton AFB.

A further possible impact from the withdrawal is possible changes in groundwater flow patterns associated with reduced groundwater withdrawal. Current groundwater use by the base units and housing is 890 million gal/year; groundwater use by base housing is projected to continue. Insufficient data were available for this analysis to determine the

effect of this change in withdrawal on movement of the contamination plume. It is thus not known if the impact, if any, is positive or negative (see the discussion of mitigative measures below).

The IRP endangerment assessment also indicated health risk from direct contact with the contaminated soil. Withdrawal of units will reduce the number of persons that could potentially come into direct contact with these soils, and will thus have a positive impact on the related health risk levels.

The following measures will ensure that the withdrawal action does not negatively affect the IRP:

- Continue monitoring the contamination plumes to provide early warning of significant changes during the period between withdrawal and cleanup for reuse. This will include at least quarterly monitoring of area water wells. If contaminant levels are observed to change, consideration will be given to modeling groundwater contaminant transport to determine groundwater pumping or some other strategy, as an interim measure, to retard plume spread.
- Continue current base security functions to prevent unauthorized entry into IRP site areas that could lead to direct contact with contaminated soils or groundwater.

Implementation of these measures will require that persons responsible for monitoring and site security be retained on base, or that these responsibilities be formally transferred to others that will remain at the base.

#### **4.1.1.2 Underground Storage Tanks**

Underground storage tanks that become inactive as the result of withdrawal of units from Norton AFB present the possibility for leaks to the soil and groundwater if adequate precautions are not implemented. New federal UST regulations, which became effective in December 1988, are designed to minimize this possibility. These regulations require the following actions to be taken with tanks that are no longer used:

- Tanks that are not used can be "temporarily" closed for 3-12 months. During the temporary closure, any leak detection or corrosion protection devices must be kept operational. (If the tank is empty, leak detection is not necessary.)
- All lines connecting to the UST, except the vent line, must be capped during temporary closure.

- Tanks that are not protected from corrosion must be permanently closed after 12 months using the following procedures:
  - Notify the regulatory authority 30 days before closure.
  - Determine if leaks have occurred and if so initiate appropriate cleanup procedures.
  - Remove all liquids, dangerous vapors, and accumulated sludge.
  - Either remove the UST or fill it with a chemically inactive solid, such as sand.
- Tanks that have corrosion protection and meet other standards for upgraded USTs can remain "temporarily" closed indefinitely.
- The regulatory authority can grant an extension beyond the 12-month limit on temporary closure for USTs unprotected from corrosion.
- The UST need not be permanently closed if it is filled with an unregulated substance (e.g., water) after it is emptied, cleaned, and checked for previous leaks.

These federal regulations, and other county regulations, will be followed to minimize any negative impacts of UST inactivity related to unit withdrawal from Norton AFB.

#### **4.1.2 Air Resources**

##### **4.1.2.1 Technical Approach and Methods**

The withdrawal and transfer of units from Norton AFB to other bases will result in a reduction in emissions of air pollutants Norton AFB base and its vicinity. The emission reduction at Norton AFB and its vicinity is a net result of the following decreases and increases:

1. Emissions to be eliminated:
  - a. All aircraft-related emissions;
  - b. All boiler and furnace emissions except for those associated with the units remaining at Norton AFB;
  - c. Other stationary source emissions; and

- d. Vehicular emissions associated with vehicles assigned to the base, military and civilian employee commuting (i.e., those to be assigned to March AFB and elsewhere), military retiree visits to Norton AFB facilities, and truck traffic associated with base operation.
2. Emissions to be created: Vehicular emissions associated with commuting by employees transferred to March AFB (assumed to remain in the vicinity of Norton AFB) and travel by retirees to use the various facilities at March AFB.

Vehicular emissions associated with the contract civilians and other industries providing services to Norton AFB are assumed to remain in the area without any substantial change. Vehicular emissions associated with Reservists (2,800 of the 3,261 Reservists currently assigned to Norton AFB will be reassigned to March AFB) are assumed not to change significantly after unit withdrawal. Vehicular emissions associated with military retiree visits to the base will cease after unit withdrawal. Vehicular emissions that may be created after the Norton AFB closure due to additional travel to March AFB by military and civilian retirees are considered in the projections.

The proposed action will also result in emission increases at the bases to which the units withdrawn from Norton AFB are to be transferred. The emission increase at each of these bases will consist of the emissions associated with the aircraft and personnel to be transferred to that base. Because most of the aircraft, which produce a major portion of the emissions at the Norton AFB, and approximately 40% of military and civilian personnel will be relocated to the nearby March AFB in Riverside County, the bulk of the emissions to be eliminated from Norton AFB will simply be transferred to March AFB. Since the Norton and March AFBs are both located in the SCAB where severe photochemical oxidant problems exist, air quality impacts of the net emission changes resulting from the proposed action over San Bernardino and Riverside counties within the SCAB are also discussed below.

Emissions to be eliminated from Norton AFB and those to be transferred to March AFB were identified from the original emissions calculations used to develop the current Norton AFB emissions inventory (Table 3.4). Emissions to be created were estimated using the same methodology for vehicular emission calculations and considering the increased distance from the Norton AFB area to March AFB.

Local air quality impacts in the vicinity of Norton AFB were assessed on the basis of the net emission changes in the Norton AFB area that will result from the unit withdrawal as fractions of the total current emissions from Norton AFB and the SCAB portion of San Bernardino County. Regional air quality impacts due to the proposed action were evaluated on the basis of the net emission changes within the SCAB portions of San Bernardino and Riverside counties as fractions of the total current emissions from the SCAB portions of the two counties. Air quality impacts along the highways leading to March AFB were assessed on the basis of the estimated increases in vehicular traffic along these highways. Since these impacts are relatively minor, air quality modeling was not performed for the impact analysis.

#### 4.1.2.2 Impact Analysis

The impacts of the action on ambient air quality are described for the following two periods: (1) during the unit withdrawal (1990-1995) and (2) after the withdrawal is completed.

**Withdrawal Period.** During the period of unit withdrawal (1990-1995), the stationary and mobile source emissions associated with units transferring to other bases will gradually be eliminated from the Norton AFB area. Thus, some minor improvements in the ambient air quality will gradually occur in and around Norton AFB.

While emission levels from Norton AFB operational sources gradually decline, there will be a temporary increase in truck traffic for moving equipment and furniture from Norton AFB to March AFB and other bases. According to the traffic impact analysis data presented in Section 4.3.5.3, an average of about 9.2 heavy-duty trucks per day will be operating for this purpose between Norton and March AFBs during this period. The air pollutant emissions associated with this truck traffic are listed in Table 4.1. Compared with current emissions from Norton AFB and San Bernardino County, these emissions are negligible. The temporary emissions in the vicinity of Norton AFB that may result from the truck traffic for moving equipment and furniture to bases other than March AFB would be substantially smaller than those associated with the move to March AFB.

**TABLE 4.1 Comparison of the Temporary Emission Increases during Unit Withdrawal and the Current Emissions from Norton AFB and San Bernardino County (tons/day)**

Source	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	TSP	PM <sub>10</sub>	Pb <sup>a</sup>
San Bernardino Co., SCAB portion	108.0	85.1	409.0	5.8	141.5	70.9	b
Norton AFB							
Current total	4.78	1.56	8.00	0.16	0.25	0.21	0.68
Temporary increases during withdrawal	0.001	0.005	0.011	<0.001	0.001	0.001	0.006

<sup>a</sup>The unit for lead is lb/day.

<sup>b</sup>Not available.

**TABLE 4.2 Expected Emission Changes at Norton and March AFBs Resulting from the Action (tons/day)**

Source	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	TSP	PM <sub>10</sub>	Pb <sup>a</sup>
<b>Norton AFB</b>							
Current total	4.78	1.56	8.00	0.16	0.25	0.21	0.68
Withdrawal impact							
Decreases	-4.75	-1.49	-7.72	-0.16	-0.23	-0.20	-0.62
Increases	0.04	0.05	0.44	0.004	0.04	0.03	0.14
Net changes	-4.71	-1.44	-7.28	-0.156	-0.19	-0.17	-0.48
Remaining after unit withdrawal	0.03	0.07	0.28	0.002	0.017	0.012	0.05
San Bernardino Co., SCAB portion	108.0	85.1	409.0	5.8	141.5	70.9	b
<b>March AFB</b>							
Relocation impact							
Net changes	3.19	0.69	4.16	0.10	0.06	0.06	b
Riverside Co., SCAB portion	79.5	54.2	323.6	3.3	137.8	<b>	b

<sup>a</sup>The unit for lead is lb/day.

<sup>b</sup>Not available.

The 1987 annual averages for daily traffic along I-215 and Route 60 between Norton and March AFBs were about 120,000 total vehicles and 8,400 trucks for I-215 and 77,000 total vehicles and 8,100 trucks for Route 60 (Calif. Department of Transportation 1988). The 9.2 trucks per day amount to less than 0.1% of the 1987 truck traffic along these highways. Thus, air quality impacts due to emissions from the additional truck traffic are estimated to be negligible. In addition, these impacts are temporary and will cease to exist after withdrawal is completed in 1995.

**Post-Withdrawal Period.** The air-pollutant emission changes in the Norton AFB area and at March AFB that will result from the action are listed in Table 4.2. The emissions remaining at Norton AFB and those from the SCAB portions of San Bernardino and Riverside counties are also shown in the table for comparison. About 91-99% of Norton AFB's current emission sources will be eliminated. (Table 4.3 expresses the

**TABLE 4.3 Comparison of Emission Changes due to the Action and Current Emissions (%)**

Change	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	TSP	PM <sub>10</sub>	Pb
Norton AFB							
Net emissions decrease							
As % of NAFB total	98.5	92.1	91.0	96.6	76.3	80.6	70.6
As % of San Ber. Co. <sup>a</sup>	4.4	1.7	1.8	2.7	0.13	0.24	b
March AFB							
Net emissions increase							
As % of Riverside Co. <sup>a</sup>	4.0	1.3	1.3	3.0	0.05	b	b
Norton and March AFBs							
Net emissions decrease							
As % of S.B. & R.S. <sup>c</sup>	0.81	0.54	0.43	0.67	0.05	b	b
As % of SCAB	0.12	0.07	0.06	0.05	0.01	b	b

<sup>a</sup>SCAB portion only of each county.

<sup>b</sup>Not available.

<sup>c</sup>SCAB portions of San Bernardino and Riverside counties.

Norton AFB data as percentages of current emissions from Norton AFB and the SCAB portion of San Bernardino County; March AFB data are expressed as percentages of the current emissions from the SCAB portion of Riverside County; and the combined data for the Norton and March AFBs are expressed as percentages of the current emissions from the SCAB portions of San Bernardino and Riverside counties.) The emission increases due to the commuting by employees transferred to March AFB and the travel by military retirees using facilities at March AFB are much smaller than the expected emission decreases resulting from unit withdrawal, resulting in a negative net change. Therefore, some improvements in the levels of primary air pollutants are expected in the immediate vicinity of Norton AFB. However, the net emission reductions are still a small fraction of the total emissions from the SCAB portion of San Bernardino County. Thus, these emission reductions would result in relatively minor improvements in the ambient air quality of San Bernardino County.

The new emissions (i.e., emission increases) listed in Table 4.2 are due to vehicular traffic associated with the commuting by employees transferred to March AFB and the travel by retirees visiting the commissary at March AFB, and therefore would occur along highways between Norton AFB area and March AFB. Traffic analysis data (Section 4.3.5.3) indicate that the estimated peak-hour traffic increases due to this

additional travel would amount to about 1-2% of the total traffic along these highways in 1988. Therefore, no significant impacts on ambient air quality are expected along these highways as a result of the action.

The emission increases at March AFB resulting from the proposed action are equivalent to a few percent or less of the emissions from the SCAB portion of Riverside County (see Table 4.3). No significant local air quality impacts are anticipated in the vicinity of March AFB as a result of these increases. The net emission changes over the SCAB portions of San Bernardino and Riverside counties that will result from the proposed action amount to an even smaller percent of the combined emissions from the SCAB portions of the two counties, that is, a decrease of less than 1% (see Table 4.3). Net emission changes are also about 0.1% or less of the total SCAB emissions. Therefore, the impacts of the proposed action on regional air quality would be negligible and slightly positive.

When the units and personnel are withdrawn, Norton AFB will be able to obtain emission-reduction credits for the eliminated emissions that are allowed under the currently valid permits or claimed in the currently pending permit applications. The amount of emission-reduction credits to be given to Norton AFB upon surrendering the permits and permit applications will be equivalent to 90% of the eliminated emissions described above (SCAQMD Rule 1306). These credits would be available for the units remaining at Norton AFB for future construction of new emission sources or modification of existing emission sources that result in emission increases. The credits can also be transferred to March AFB. However, the amount of credits will be reduced by the distance penalty determined by SCAQMD Rule 1307.

#### **4.1.3 Water Resources**

Withdrawal of units from Norton AFB will significantly reduce groundwater consumption by the base, which is currently estimated at 890 million gal/year, including consumption by base housing. This will be a positive impact, increasing the groundwater availability for other users (also see Section 4.1.1.1).

No negative impacts to surface water were identified.

### **4.2 BIOLOGICAL ENVIRONMENT**

#### **4.2.1 Vegetative and Wildlife Resources**

**Technical Approach and Methods.** The common approach to assessing impacts to terrestrial resources is to (1) identify the plant and animal communities typically found at the site, (2) determine any unusual habitats or special habitat requirements for plants and animals, (3) overlay the known and potential impacts with what is known about the plant and animal communities, and (4) predict known and potential impacts to the vegetative and wildlife resources that may result from the action.

**Impact Analysis.** The vegetative resource on Norton AFB may be removed or altered because of the troop withdrawal. However, this impact is not expected to be large or significant. Most of the native plant community on the base is already altered and maintained as fields or lawns. The native plants that exist are primarily found along the Santa Ana River, and this area is not expected to be disturbed by unit withdrawal.

Animal species that are found on Norton AFB are mostly indigenous and common to the area. Wildlife species may become temporarily displaced because of the short-term increase in activity, noise, and vegetative disturbance that may result from troop withdrawal. However, none of these potential impacts would be significant enough to threaten the existence of an entire species. The lack of concentrated use in certain areas during the time between the completion of unit withdrawal and reuse of the base may actually enhance the current use of the base by wildlife.

**Cumulative Impacts.** The action would result in no appreciable negative cumulative impacts to the vegetative or wildlife resources. Depending on the elapsed time between completion of the action and reuse of the base, a slight positive impact may occur for the terrestrial environment. Because the areas surrounding the base are heavily developed, allowing a large contiguous tract of land to remain with relatively less disturbance may be advantageous to the local wildlife.

**Mitigative Measures.** Because the action is not expected to adversely affect the local environment, no specific mitigative measures are planned.

#### 4.2.2 Threatened and Endangered Species

**Technical Approach and Methods.** In assessing impacts to threatened and endangered species, several steps are needed to ensure compliance with the Endangered Species Act. The specific steps needed are (1) to inform the FWS, in writing, of the federal action under consideration, including a map of the project boundary, and to request from them a list of endangered, threatened, and candidate species for the area of concern; (2) upon receiving their response, to determine if the federal action requires a biological assessment, which is often the case in a construction project; and (3) if a biological assessment is not required, to review project activities to determine whether the listed species would be affected. The Air Force, as the lead agency for the action, has the primary responsibility for taking these steps.

**Impact Analysis.** Based on informal discussions to date between FWS and Air Force representatives, closure of the base is not expected to have adverse effects on any endangered species that may be on Norton AFB. Only the Santa Ana woolly-star is known to occur within the floodway of the Santa Ana River near Norton AFB. The other federally listed endangered species, slender-horned spinyflower and least Bell's vireo, may also exist on the base in association with the Santa Ana River floodway. The survey

to determine if protected species are present on Norton AFB has been conducted by the FWS; the report has not yet been issued, but there is no expectation of harm to protected species because closure should not alter or disturb the area associated with the Santa Ana floodway and its environs.

As for the four candidate species that may occur, the action is not expected to cause a significantly adverse impact. However, several of these species may experience being temporarily displaced because of the increase in activity, noise, and vegetative disturbance that may result from unit withdrawal. Nonetheless, these potential impacts would not be significant enough to threaten the existence of the species. The lack of concentrated use in certain areas during the time between the completion of unit withdrawal and reuse of the base may actually enhance the current use of the base by these wildlife species.

**Cumulative Impacts.** The action would result in no appreciable negative cumulative impacts to federally listed endangered or candidate species. Depending on the elapsed time between completion of the action and reuse of the base, a slight positive impact may occur for these species. Because the areas surrounding the base are heavily developed, allowing a large contiguous tract of land to remain with relatively less disturbance may be advantageous to these endangered and candidate species.

**Mitigative Measures.** If the survey indicates the presence of threatened or endangered species, MAC will consult with the FWS Endangered Species office and request their recommendations for mitigative measures.

#### 4.3 HUMAN ENVIRONMENT

##### 4.3.1 Archaeological, Cultural, and Historic Resources

Closure of Norton AFB is not expected to have any adverse effect on archaeological sites or historical structures listed or eligible for inclusion in the *National Register of Historic Places*. Removal of military units from Norton AFB would entail negligible disturbance to the ground surface or subsurface. Maintenance of existing structures would continue (at a reduced level), as some units would remain on base. Withdrawal of the units does not include transfer of any base property to private ownership (which would remove historic properties from the protection of federal and state historic preservation laws). MAC personnel will seek SHPO concurrence with a "no effect" determination for the closure action.

<sup>SMO</sup>  
The ~~SMO~~ is considering the option of using two existing warehouses for support facilities. If this is done, some minor modification of these facilities could occur. If the facilities selected are potentially significant historic properties, MAC will ensure that it complies with the National Historic Preservation Act.

### **4.3.2 Noise**

Withdrawal of units from Norton AFB will have the positive impact of eliminating the noise levels associated with aircraft landings, departures, and ground activities (refer to Fig. 3.10 for current noise levels). Because reuse of the base as an airport is possible, noise levels due to aircraft operations could conceivably increase in the future.

Some temporary increase in noise level would be associated with the truck transportation used to move the units from the base. This truck traffic has been estimated at an average of 9.2 trucks per day during the move operations (Section 4.3.5.3). This would be offset by the decrease in current ground transportation in and surrounding the base, which includes an estimated average of 250 trucks entering and leaving the base each weekday.

### **4.3.3 Accident Potential Zones and Building Height Limitations**

Cessation of flight operations at Norton could eliminate the zoning constraints due to accident potential and restrictions on building height in the vicinity of the runway (see Figs. 3.12 and 3.13). Reuse of the facility as an airport is a possibility, and any controls that have been implemented to prevent incompatible development should remain in effect until decisions on reuse have been made.

### **4.3.4 Hazardous Materials**

#### **4.3.4.1 Hazardous Waste Generation and Management**

**Impact Analysis.** The proposed withdrawal of units from Norton AFB would reduce hazardous waste generation at the base by 3,800 gal/mo. Of this amount, 1,746 gal/mo requires off-site disposal and the remainder is recycled or processed on site through the IWTP.

Reduction in the generation of hazardous waste is a positive impact. The risk of spills and possible site contamination related to the generation, storage, and handling is consequently reduced. The reduced generation also results in reduced risk related to transporting the wastes off site for treatment and disposal.

(For a number of the units being withdrawn, the action is not actually a cessation of generation, but rather a transfer of the generation to the relocation sites. Separate assessments are being conducted of the impacts at those relocation sites.)

There will be some negative impact on the handling of hazardous material and waste from the withdrawal process due to (1) the need to remove and transport or dispose of unused hazardous material stocks and (2) the process of cleaning, draining, and other preparations of equipment for transport that will generate additional waste, some of

which will be hazardous. These operations will be carried out in compliance with applicable federal and state regulations.

The proposed withdrawal of units from Norton AFB will also have the positive impact of reducing the nonhazardous refuse generated at Norton AFB and disposed of in sanitary landfills. The current total refuse generation is estimated at 2,060 tons/year; however, this generation will not be eliminated completely due to retention of the family housing and some tenants under the withdrawal plan. An additional positive impact is the reduction of herbicide and other pesticide application at Norton AFB.

**Mitigative Measures.** Any negative impacts related to ongoing generation of hazardous waste at Norton AFB (Section 3.4.4.1), or from the generation of new wastes and handling of unused hazardous material as part of the withdrawal process, will be minimized by ensuring that currently available guidelines continue to be followed. These guidelines, as described in the Hazardous Waste Management Plan for the base (63rd ABG 1989), include:

- Using approved containers with warning labels,
- Keeping hazardous waste containers in approved accumulation and storage locations,
- Segregating wastes,
- Providing a complete analysis of the contents of the waste,
- Completing manifests for the transfer of the material,
- Maintaining records,
- Training all persons involved in the handling of the wastes, and
- Maintaining spill response equipment and a plan for its use.

Hazardous waste accumulation and storage locations that are no longer used as the result of the withdrawal must be formally closed. The Hazardous Waste Management Plan (63rd ABG 1989) requires that all hazardous materials be removed, any remaining spill residues be cleaned up by trained personnel, and notification of closure be submitted to appropriate authorities.

Closure of the DRMO storage site will also include closing out the interim (Part A) permit for that site.

#### **4.3.4.2 PCBs**

The PCB and PCB-contaminated transformers in service at Norton AFB will not be directly affected by the withdrawal. To ensure that these remaining transformers do

not leak and create site contamination, the procedure will be continued, as required by regulations, to inspect these transformers every three months, or every month if the transformer is in a high-risk area. Further, an annual report will continue to be prepared and maintained for PCB dispositions by the base Environmental Coordinator or appointed alternate. Air Force policy is that Norton AFB will be PCB-free by the end of FY91.

#### 4.3.4.3 Asbestos

The asbestos used in the construction of the Norton AFB facilities will not be directly affected by the proposed withdrawal, but will likely be a factor during rehabilitation of buildings required for retention of the BMO. Should removal of asbestos be involved, this will be handled by trained personnel using approved procedures.

Additional exposure due to unauthorized entry into the vacated buildings will be minimized by continuing Security Police checks.

#### 4.3.5 Socioeconomics

An EIS is required to discuss socioeconomic effects only when such effects are interrelated with natural or physical effects. During preparation of this EIS, the Air Force considered whether any indirect biophysical effects could be attributed to socioeconomic impacts resulting from the closure of Norton AFB. No such effects or interrelationships were found. Therefore, it was not necessary for the completeness of the environmental analysis to forecast socioeconomic consequences, and this EIS does not attempt to do so.

The Air Force is sensitive to the community upheaval caused by closing a major employer like Norton AFB. Therefore, the Air Force is working with the OEA to assist those communities expected to be hardest hit as a result of base closure.

Additionally, a second EIS will be prepared to cover the Air Force's proposed final disposition of the base property, including community reuse. Socioeconomic impacts, both positive and negative, will be discussed in the reuse EIS to help the Air Force make its decisions on disposal and reuse alternatives. This is because there will be an interrelationship between the impacts, biophysical and social, that will be generated by different ways of making new use of the facilities. The treatment of socioeconomics in the reuse EIS will be limited to those circumstances where the interrelationships require the analysis in order to understand the scope of the environmental impacts.

In addition, the Air Force will prepare a companion study of the socioeconomic effects of disposal and reuse. This study will treat socioeconomic impacts more comprehensively than will the disposal and reuse EIS. For example, it will examine overall effects of reuse on such factors as the loss of tax revenue, housing and school impacts, and the loss of employment from base closure as if there were not positive benefits from reuse. The elements will then be compared to the gains expected as a result of the reuse options for the base.

Therefore, if the expected socioeconomic impacts from reuse are found to lead to effects on the biophysical environment, they will be included in the reuse EIS. Even if they do not have such effects, they will be included in the companion socioeconomic study. Regardless of the document in which these socioeconomic analyses appear, they will be a part of the analysis process and presented to the public on a timely basis for full public review and comment. The socioeconomic analyses will also be fully utilized in decision making with regard to disposal and reuse.

The OEA, located in the Office of the Assistant Secretary of Defense, provides the chief staff arm for the President's Economic Adjustment Committee (EAC). The EAC consists of the federal department and agency heads and was established under Executive Order 12049 on March 27, 1978, to bring to bear the resources of various federal agencies in assisting communities affected by base closures.

One of OEA's activities is to assist these communities to develop and implement a comprehensive economic recovery program. The EAC then affords priority assistance to community requests for federal technical assistance, financial resources, excess or surplus property, or other requirements that are part of this program.

Economic adjustment assistance has been initiated in the Norton AFB area. Currently the OEA is working with the Inland Valley Development Agency in an effort to identify alternative uses for the base. The Agency, which was established by communities in the region to plan for and implement the redevelopment of the base, is the primary point of contact for Air Force and OEA assistance.

The OEA is assisting the Agency with the redevelopment of Norton AFB in what can be summarized as a three step process. First, the impacted community or area must request OEA assistance. This was accomplished through a request from the Inland Valley Development Agency. Second, a plan for reuse of the base is prepared. This step is currently underway. The Agency, with the assistance of a private consulting firm, is preparing a plan identifying and evaluating potential reuse alternatives. The planning effort is being funded by the OEA, the Federal Aviation Administration (FAA), and state and local governments. Alternatives identified in this plan will be further evaluated in an EIS for base reuse and disposal. In the third and final step, the plan implementation will be initiated. The OEA can assist the Agency in implementation directly and through the EAC.

#### **4.3.5.1 Employment and Economic Activity**

The impacts on the social and economic systems resulting from the base closure -- e.g., employment losses, reduction in economic activity, secondary economic impacts, and impacts on the social structure -- are not addressed in this analysis. These topics will be discussed in the reuse EIS.

#### **4.3.5.2 Public Utilities**

Using 1987 and 1988 as test years for comparing utility output and service to Norton AFB, it appears unlikely that there will be any impact on the remaining

ratepayers from the withdrawal of the base. The base consumed 74,129.4 MWh in 1987, and housing consumed 2,606.3 MWh. The combined total of 76,735.7 MWh accounts for only 0.1% of the total disposition for Southern California Edison (DOE 1987). Likewise, the natural gas use at the Norton facility (including housing) was about 453,382 million Btu, accounting for less than 0.05% of the output of Southern California Gas Company.

Of the current 0.85-1.0 million gal/day discharged from Norton AFB into the city of San Bernardino Water Reclamation Department sewer system, a significant portion will be eliminated due to the proposed withdrawal. The current estimated discharge into the system from all users is 25.5 million gal/day. The reduction in the Norton AFB discharge (less than 4% of the total discharge) will not affect the overall operation of the sewer collection and treatment system (Watson 1989).

#### 4.3.5.3 Transportation

**Impacts of Moving Vans.** The estimated duration of the unit withdrawal from Norton AFB is six years (Fig. 2.1). The moving actions to different AFBs will be phased, with the relocation to March AFB estimated to continue for two years. The impact analysis in this section includes estimating the number of truck trips needed to move different facilities from Norton AFB to March AFB. The remaining planned relocation from Norton AFB to other bases is scheduled to be undertaken in various short-term phases over the six-year withdrawal. The expected impact from the moving action will be mainly due to the relocation to March AFB, which will be the destination for a majority of the moves. The impact of truck trips required for the withdrawal of units to other bases (i.e., McChord, Kirtland, Travis, Luke, Los Angeles, and McClellan AFBs) was approximated by assuming conservatively that materials for these bases will affect the same roads at the same time as the move to March AFB. This approach thus overestimates the impacts of the truck moves on the transportation patterns in San Bernardino and Riverside counties.

The estimation of the number of truck trips for relocation has been based on the square footage of buildings, from which an effective volume was calculated. Table 4.4 provides estimates of floor space, effective volume, and number of truck trips to move the effective volume; these estimates constitute a worst-case scenario. Based on the move duration and the assumption that the relocation will continue for 600 working days, the number of truck trips per day has been estimated to be 9.2.

In the study area, truck traffic averages about 10% of the total traffic volume on Interstate 10, 5% on Interstate 30, 11% on Route 60, and 10% on Interstate 215. The truck volumes are estimated from the data obtained from relevant highway interchanges in the region (Calif. Department of Transportation 1988). In comparison to the average daily truck traffic on the California State Highway System, the additional truck traffic associated with unit withdrawal is insignificant. It will contribute less than a 1% increment to the annual average traffic on the relevant highway segments between Norton and March AFBs.

**TABLE 4.4 Estimated Truck Trips to Relocate Norton AFB Facilities, by Primary Use of Facility Moved**

Primary Use <sup>a</sup>	Floor Space (ft <sup>2</sup> ) <sup>b</sup>	Effective Volume (ft <sup>3</sup> )	No. of Truck Trips <sup>c</sup>
Office	1,216,070	2,736,157	1,094
Warehouse or other storage	1,762,867	7,051,468	2,821
Shop, laboratory, medical office, or other area for use of equipment	1,238,124	2,042,905	817
Dormitory or other temporary housing	495,351	891,632	357
Recreation, dining, retail, or other common use	679,584	1,104,324	441
Total			5,530

<sup>a</sup>See Table A.1 in App. A for a summary of floor space occupied by each organization at Norton AFB.

<sup>b</sup>It is assumed that the floor space of materials to be moved is 75% of the office areas; 80% of the warehouse and storage areas; 55% of the shops, laboratories, and medical office areas; 60% of the dormitories and temporary housing areas; and 65% of the recreation and common use areas. Values differ from that in the DEIS because some buildings were mistakenly omitted from the inventory and the several changes in the action that have occurred since the DEIS.

<sup>c</sup>Number of truck trips = (effective volume of each facility) ÷ (average volume of a standard truck, 2,500 ft<sup>3</sup>).

**Impacts of Commuters on Area Highways and Streets.** For impacts of commuter traffic on the regional road system, the reassignment of personnel from Norton AFB to March AFB is the controlling factor. The analysis assumes that 3,497 employees will be transferred to March, with 2,947 employees (including major contractors) remaining at Norton AFB (see Table 2.3).

The analysis of impacts on roads included the following conservative assumptions (which overestimate the impact):

- The analysis was only for the increase in travel to March AFB and did not consider the effect of the decrease in travel to Norton AFB.

- The move of transferred personnel to housing nearer March AFB was not considered; that is, the locational distribution remains as illustrated in Fig. 3.16. This assumption is particularly conservative for military personnel that are typically rotated every 3-5 years; new personnel replacing existing personnel assigned to relocated units could be expected to find housing nearer March AFB. Nearly 75% of the personnel transferring to March AFB are military.
- The effect of deactivation of units at March AFB was not considered.
- Residents from a given general locality were assumed to all travel along the same route, which overestimates impacts for those routes.

Major highways and streets that would be used in the commute to March AFB are shown in Figs. 4.1-4.3.

Based on the above assumptions, impacts to interchanges along I-215, I-10, and Route 60 from the action are estimated as shown in Tables 4.5-4.7. The estimated traffic increase at any interchange is less than 2%. (Baseline data were obtained from a study by the Southern California Association of Governments [SCAG 1987].) Some interchanges, however, currently have volumes that exceed the design capacity (i.e., a V/C ratio > 1.0), and the increases from the action would contribute to the current congested conditions.

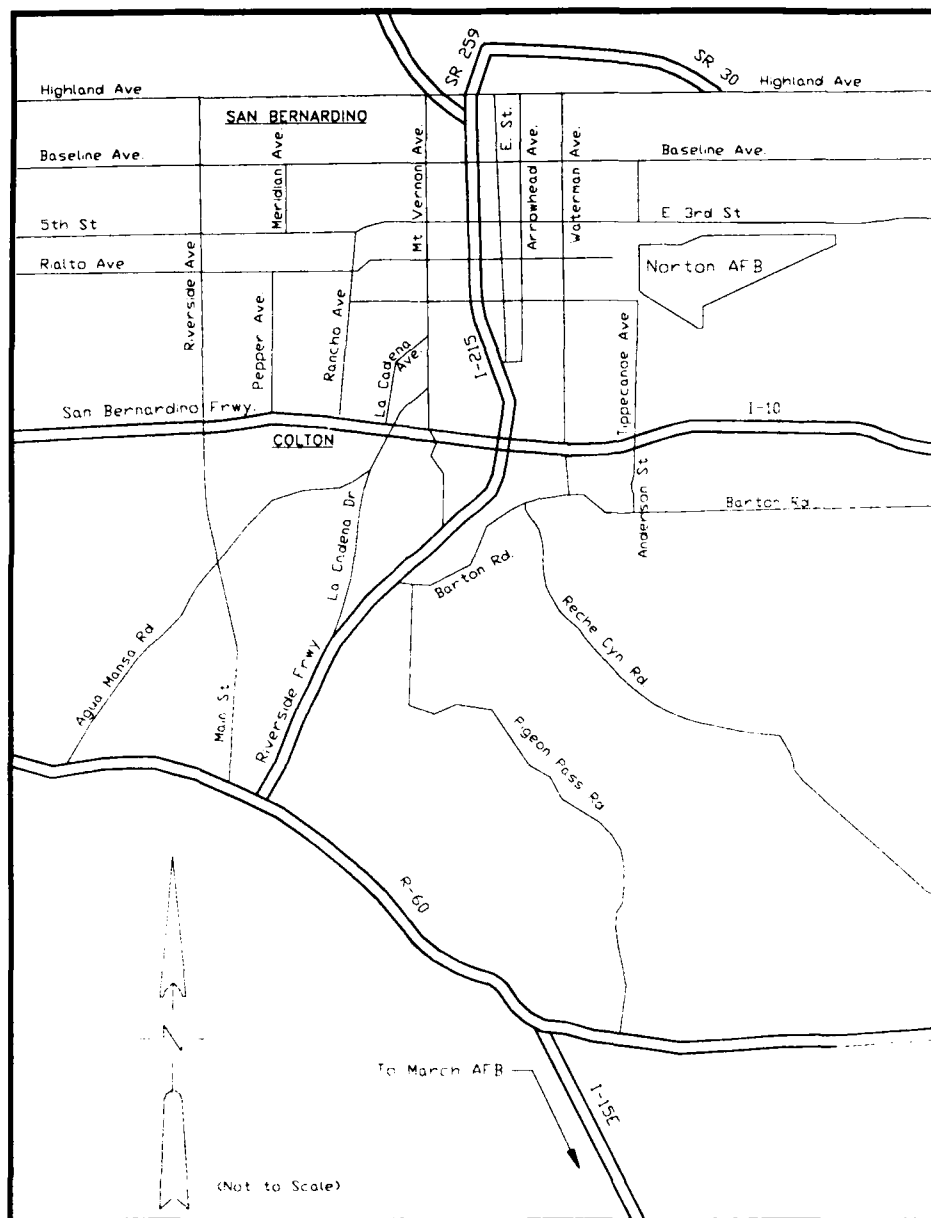
Since this analysis was performed, the number of employees to be transferred to March AFB has decreased by 70% (from 3,497 to 1,062). The traffic increases at various interchanges, listed on Tables 4.5-4.7 (between 0.15% and 1.94%), are thus conservative; the actual values should be smaller by a factor of 2 to 3.

The level of congestion on area roads is anticipated to increase independent of the action (Figs. 4.4 and 4.5), although the impact of the action on these roads can be expected to decline in the future as the off-site housing distribution for personnel formerly employed at Norton AFB shifts toward March AFB.

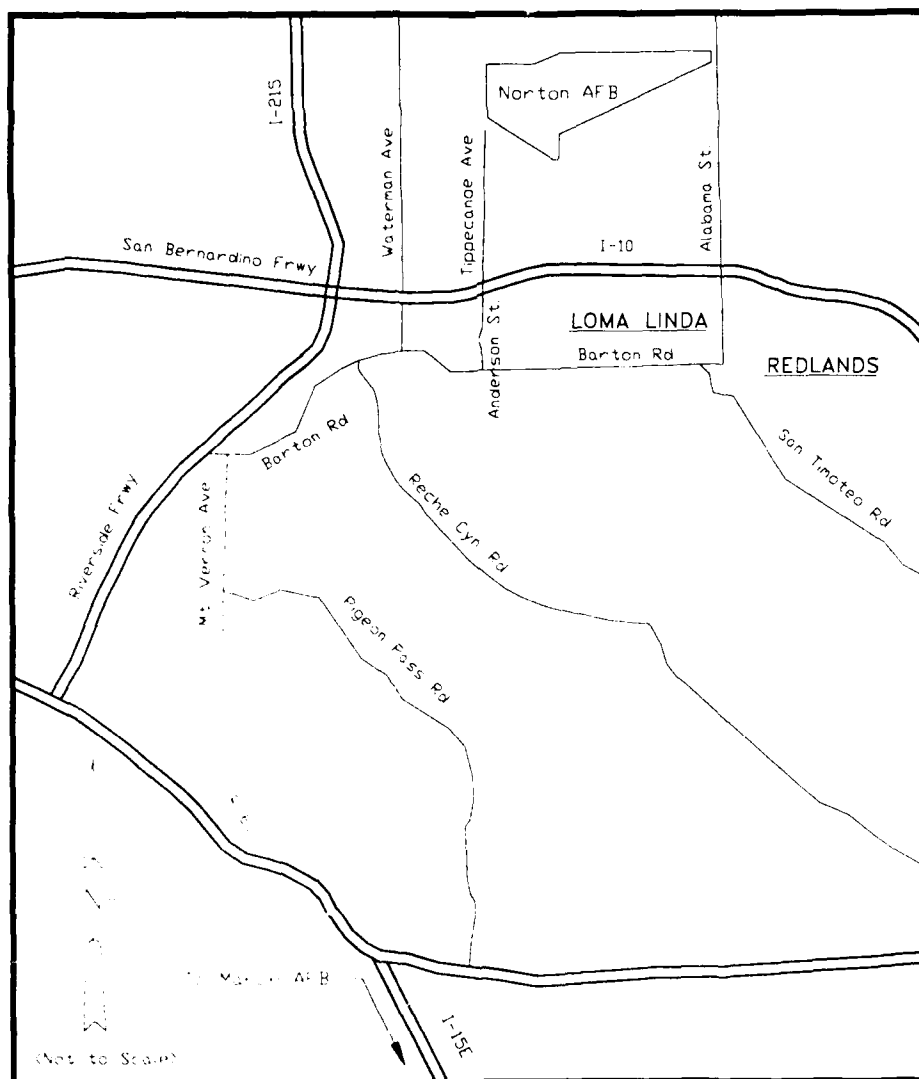
The military personnel occupying the 264 units of family housing to be retained at Norton AFB will continue to contribute to local road traffic loads because of their commute to March AFB.

If commuters encounter delays on freeways, they may prefer to follow local streets and "short-cut" roads (Figs. 4.1-4.3). Specifically, Tippecanoe Avenue, Alabama Street, and Orange Street will carry the traffic flow from the San Bernardino (Norton) area, Redlands, and Highland during peak hours. If commuters exit from freeways (e.g., I-215 and I-10) to follow short cuts, the impacts will shift to Pigeon Pass, Riche Canyon, and San Timoteo Roads, which are connecting side routes to Route 60.

Reduced volume will be the impact to peak-hour traffic on local streets in the Norton AFB area. The average daily traffic immediately surrounding Norton AFB will



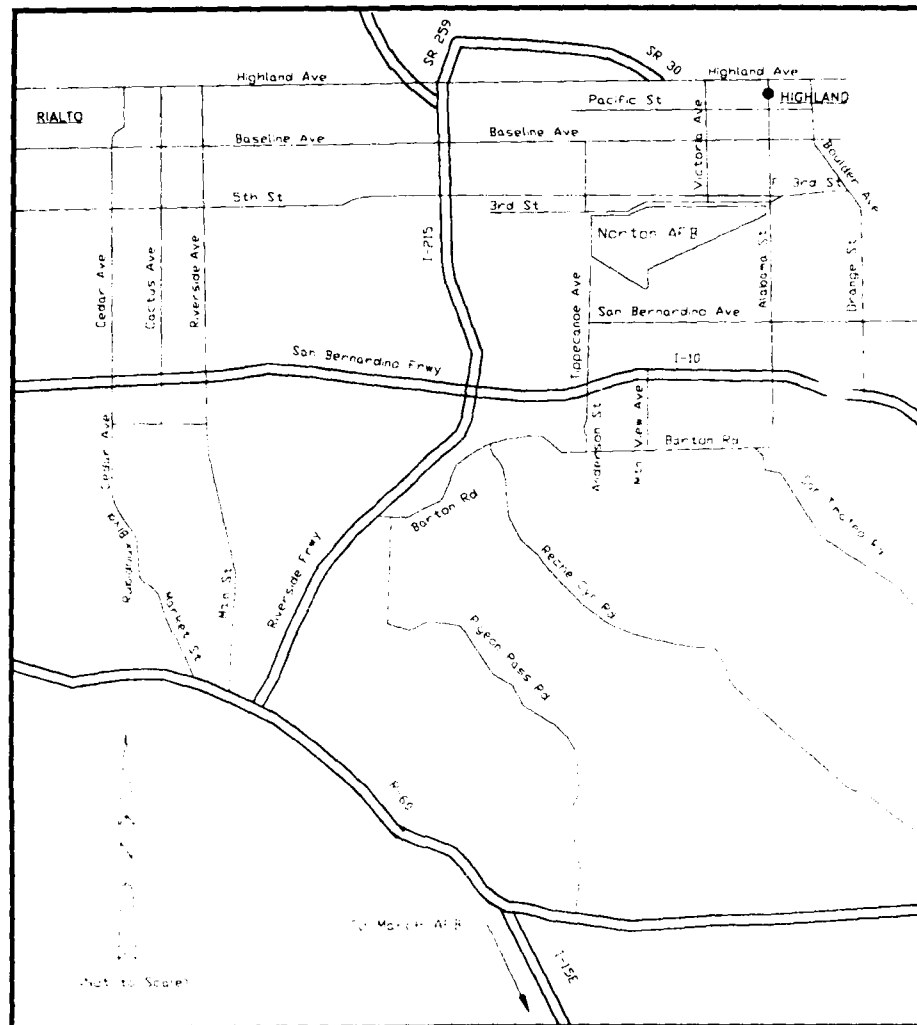
**FIGURE 4.1 Alternate Roads to March AFB from San Bernardino and Colton**



**FIGURE 4.2 Alternate Roads to March AFB from Loma Linda and Redlands**

fall by more than 60% of the current traffic. Transferred Norton AFB employees living in Redlands, Colton, Loma Linda, and other places west and south of the base need not approach Norton AFB to commute to March AFB. The commuters who avoid the delay and congestion of highways might cause deterioration in the level of service on north-south local streets, such as Waterman Avenue, Tippecanoe Avenue, Alabama Street, Reche Canyon Road, Pigeon Pass Road, and San Timoteo Road.

With reference to the definition specified by the Transportation Research Board (1986) (see App. B), Table 4.8 presents the V/C ratios and levels of service of affected local streets. As indicated in the table, traffic volume on these area streets is well



**FIGURE 4.3** Alternate Roads to March AFB from Rialto and Highland

below capacity, with the exception of Waterman Avenue, which is near capacity. In addition to the higher traffic density on the north-south Highland Avenue, peak-hour traffic will increase on west-bound Baseline Avenue, 5th Street, 3rd Street, and Mill Street. However, the incremental increase in local-street traffic volume by former Norton AFB employees commuting to March AFB is less than 1%, and does not change the existing level of service indicated on Table 4.8.

**Mitigative Measures.** Over the short term, the Norton AFB unit withdrawal will contribute to a worsening traffic problem in the area. A number of regional road improvements that have been suggested at various times could help this situation, in particular the extension of Route 30 and the construction of the proposed Loma Linda - Moreno Valley Road with Mountain View and California Street alternates (Fig. 4.6).

TABLE 4.5 Transportation Impacts on Interstate 215

I-215 Interchange <sup>a</sup>	Peak-Hour Volume	Average Daily Traffic	Traffic Increase (%)
Interchanges near March AFB			
Van Buren Boulevard	4,000	40,000	0.51
Cactus Avenue (exit to March AFB)	4,150	41,500	1.67
Allesandro Boulevard	4,000	40,000	1.21
Riverside			
Central Avenue	11,000	110,000	0.79
Jct. Rtes. 60 and 91 West (Riverside and Escondido Freeways)	12,500	125,000 <sup>b</sup>	
Colton			
Center Street	11,200	112,000	0.16
Barton Road	11,200	112,000	1.22
Mount Vernon Avenue and Washington Street	11,100	111,000	0.99
Jct. I-10 (San Bernardino and Riverside Freeways)	14,000	140,000 <sup>b</sup>	1.42
San Bernardino			
Orange Show Road	13,100	131,000 <sup>b</sup>	0.84
Mill Street	12,700	127,000 <sup>b</sup>	0.79
Jct. Rte. 66 West and Fifth Street	12,000	119,000 <sup>b</sup>	1.00
Base Line Street	10,700	113,000	1.46
Jct. Rte. 30 and Highland Avenue	4,100	47,000	1.95

<sup>a</sup>Interchanges are listed in a south-to-north sequence.

<sup>b</sup>Congested: the V/C ratio is between 1 and 1.25.

Source: Baseline data from SCAG (1987).

**TABLE 4.6 Transportation Impacts to Interstate 10**

I-10 Interchange <sup>a</sup>	Peak-Hour Volume	Average Daily Traffic	Traffic Increase (%)
Fontana, Sierra Avenue	10,100	113,000	0.15
Bloomington, Cedar Avenue	10,300	114,000	0.15
Pepper Avenue	11,200	134,000 <sup>b</sup>	0.94
Rialto, Riverside Avenue	10,800	130,000 <sup>b</sup>	0.60
Colton			
Eighth Street	11,400	127,000 <sup>b</sup>	0.17
Rancho Avenue	11,200	124,000 <sup>b</sup>	0.51
Mount Vernon Avenue	11,200	124,000 <sup>b</sup>	0.96
Jct. I-215 (Riverside and San Bernardino Freeways)	12,600	140,000	0.79
	12,600	140,000	0.79
San Bernardino, Waterman Avenue	11,200	124,000	1.38
Loma Linda, Tippecanoe Avenue	10,300	114,000	0.98
Redlands			
Alabama Street	8,500	94,000	0.97
Jct. Rte. 38 North, Orange Street	7,200	80,000	1.16
University Street	6,600	73,000	0.63
San Timoteo Canyon Road	4,000	47,000	1.67

<sup>a</sup>Interchanges are listed in a west-to-east sequence.

<sup>b</sup>Congested: the V/C ratio is between 1 and 1.25.

Source: Baseline data from SCAG (1987).

**TABLE 4.7 Transportation Impacts to State Route 60**

Rte. 60 Interchange <sup>a</sup>	Peak-Hour Volume	Average Daily Traffic	Traffic Increase (%)
Mira Loma			
Van Buren Boulevard	6,100	61,000	0.08
Estiwanda Avenue	6,500	65,000	0.11
Sunnyslope, Valley Way Mission Boulevard	6,500	63,000	0.10
Riverside			
Main Street	7,100	71,000 <sup>b</sup>	0.58
Orange Street Overcrossing	8,100	81,000 <sup>b</sup>	0.58
Jct. I-215 North and Rte. 91 Freeways	7,500	75,000 <sup>b</sup>	1.94
Sunnymead			
Pigeon Pass Road	6,100	61,000	1.21
Heacock Street	4,950	47,000	1.56
Moreno, Redlands Boulevard	2,700	25,500	1.75

<sup>a</sup>Interchanges are listed in a west-to-east sequence.

<sup>b</sup>Congested highway: the V/C ratio is between 1 and 1.25.

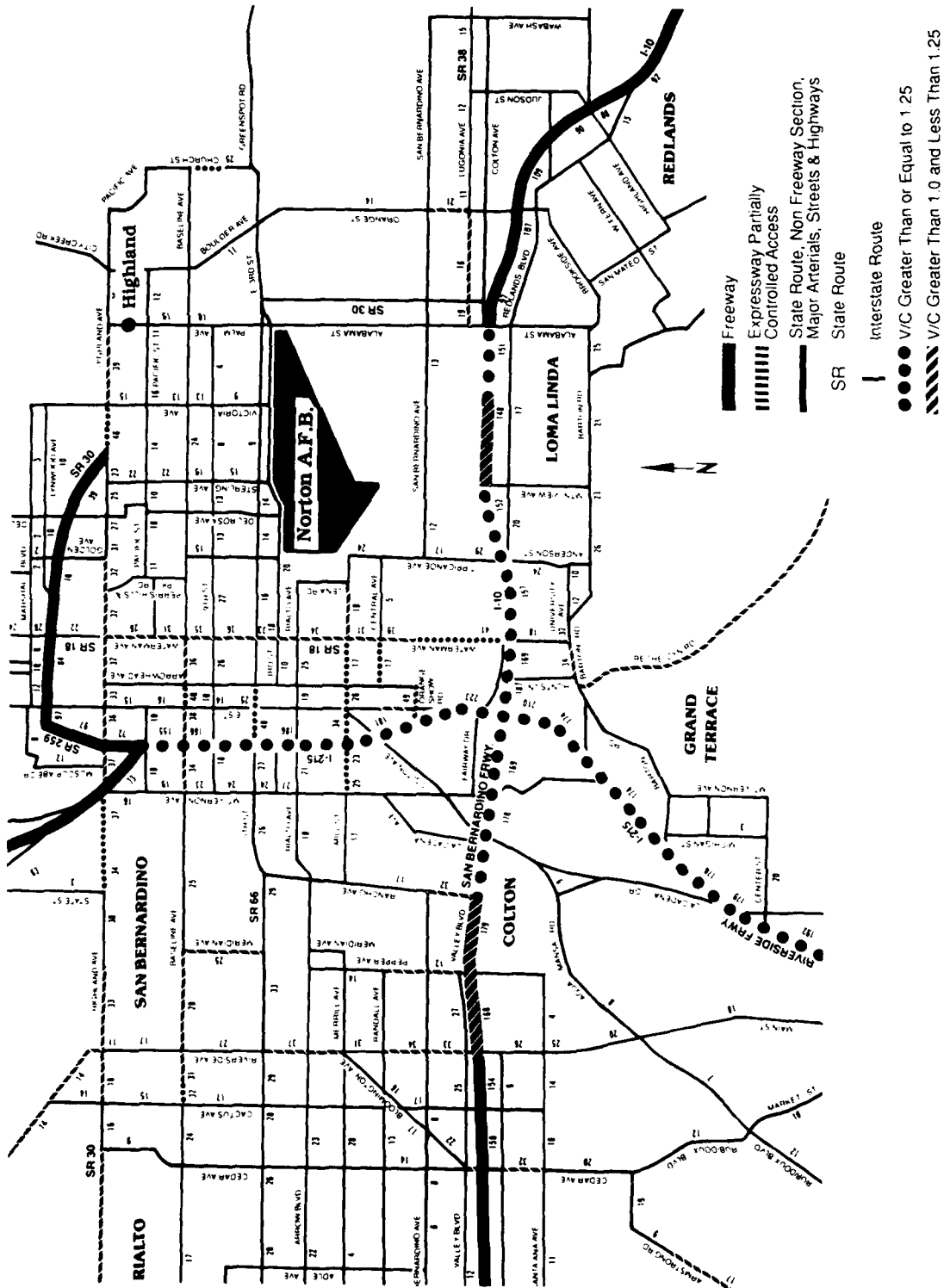
Source: Baseline data from SCAG (1987).

In the absence of, or in addition to, improvements by state and local governments to regional roads and highways, the Air Force is considering several alternatives to mitigate withdrawal-related transportation impacts. These include encouraging employees to share rides by car/van pooling, staggering work hours of organizations, and allowing employees to work flexible hours. Implementation of some or all of these measures should reduce negative impacts from the unit withdrawal.

#### **4.3.5.4 Recreational and Support Resources**

The unit withdrawal would result in a loss of most, if not all, recreational facilities and support services at Norton AFB. This loss would affect the local community.

Troops and retired personnel that would not move from Norton AFB would seek recreational facilities and support services within the surrounding area or at March AFB about 20 mi away. Because of the large population in the Norton AFB area, there is a



**FIGURE 4.4 Average Daily Traffic (in 1,000s) and V/C Ratios on Study-Area Roads in 2010 if No Improvements Are Made to 1984 System (Source: SCAG 1987)**

**FIGURE 4.5 Average Daily Traffic (in 1,000s) and V/C Ratios on Study-Area Roads in 2010 if Proposed Improvements Are Made to 1984 System (Source: SCAG 1987)**

**TABLE 4.8 Transportation Impacts on Local Streets**

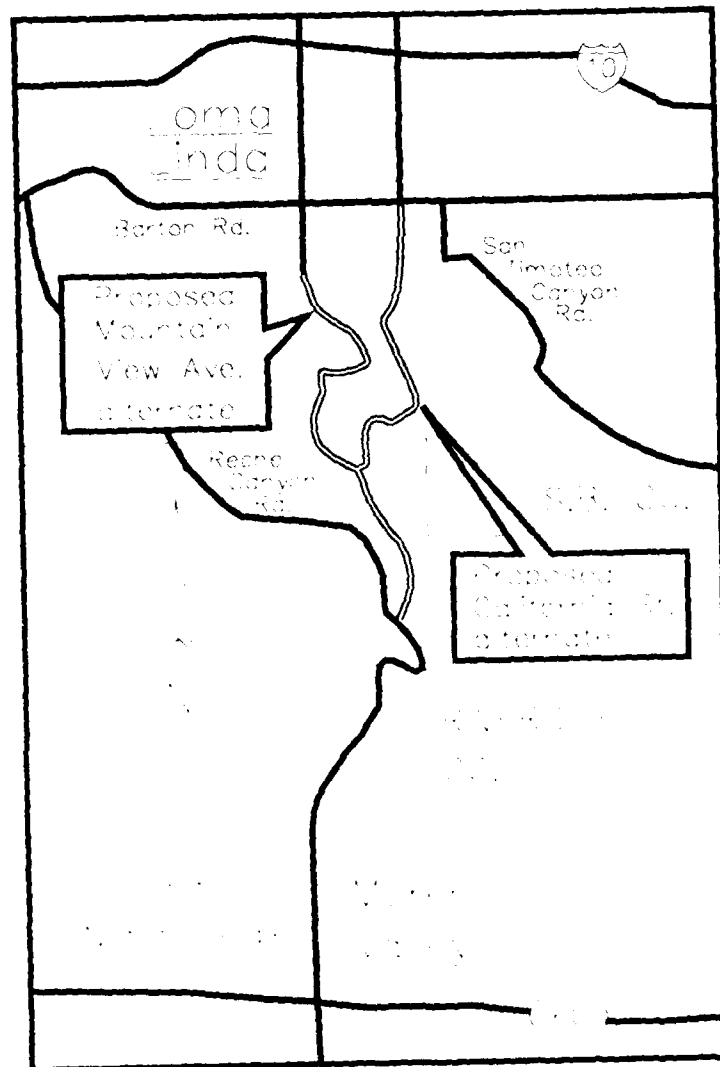
Street	Direction	Change	Avg. 1988 Peak-Hour Volume	V/C Ratio	Arterial Level of Service <sup>a</sup>
Third Street	Westbound	Increase	1,022	0.69	C
	Eastbound		1,053		
Tippecanoe Avenue	Northbound	Increase	830	0.56	A
	Southbound				
Victoria Avenue	Northbound	Negligible	412	0.27	A
	Southbound				
Waterman Avenue	Northbound	Negligible	1,372	0.92	E
	Southbound				
Pacific Street	Both	Negligible	695	0.48	B
Palm Avenue	Northbound	Negligible	395	0.30	A
	Southbound				
Fifth Street	Both	Increase	638	0.43	A
Alabama Street	Northbound	Increase	652	0.47	A
	Southbound		668		
Barton Road	Eastbound	Increase	860	0.58	B
	Westbound		560		

<sup>a</sup>Level-of-service definitions: A = primarily free flow, B = reasonably unimpeded flow, C = stable flow, D = congested flow, E = significantly delayed flow, and F = extremely slow flow. See App. B for further discussion.

potential that some recreational facilities in the surrounding community would be adversely affected by increased use.

#### **4.3.5.5 Military and Civilian Retirees**

For base retirees, two types of impacts are identifiable. First, although several military bases are close to Norton AFB, it can be presumed that the proximity of Norton AFB made it the first choice of retirees needing medical or recreational services. Traveling to another site for such services will incur a certain amount of inconvenience for these retirees. If the other site is farther away from their homes, there will be costs



**FIGURE 4.6 Proposed Road Construction near Norton AFB. Mountain View Avenue and California Street Alternates (Revised)**

associated with the additional travel required to reach comparable services. Second, there is the question of finding comparable services elsewhere (but relatively nearby).

#### **4.3.5.6 Land Use**

The action would not alter the current land use at Norton AFB.

#### **4.4 CUMULATIVE IMPACTS**

The action would result in no appreciable negative cumulative impacts.

#### **4.5 COMMITMENTS OF IRREVERSIBLE AND IRRETRIEVABLE RESOURCES**

Capital, energy, materials, and labor would be committed to the construction and rehabilitation of buildings for BMO and for the transportation of equipment from Norton AFB to the other bases. Only lands previously committed to activities at Norton AFB would be affected by the activities that will remain at Norton AFB.

## 5 CONSULTATION AND COORDINATION

### 5.1 CONTACTS

The following agency representatives have been contacted, have participated in the scoping process, or have expressed interest in the action. Their input into this EIS has been requested.

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**APPENDIX A:**  
**SUPPLEMENTARY ORGANIZATIONAL AND OPERATIONAL**  
**INFORMATION FOR NORTON AIR FORCE BASE**

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## **APPENDIX A:**

### **SUPPLEMENTARY ORGANIZATIONAL AND OPERATIONAL INFORMATION FOR NORTON AIR FORCE BASE**

#### **A.1 ORGANIZATIONS AND MISSIONS**

##### **Primary Organization and Mission**

The 63rd Military Airlift Wing (MAW) is the host unit at Norton AFB; its mission is to maintain an immediate airlift capability to deliver and sustain air and ground combat forces anywhere in the world. The 63rd MAW also provides airlift augmentation as may be directed to Air Force components, exercises, and training programs to maintain a high state of readiness of all wing resources and assigned reserve forces. The wing also provides the support functions to maintain facilities at Norton AFB.

##### **Tenant Organizations and Missions**

Norton AFB is the host to several tenant organizations and provides services, facilities, and other support to these organizations. The following list identifies the missions of the major tenant organizations at Norton AFB.

##### **Air Force Inspection and Safety Center Headquarters (AFISC)**

The AFISC is responsible to the Inspector General for planning, directing, and evaluating the AFISC inspection system and safety programs and for evaluating the Air-Force-wide inspection system, to assist in ensuring that Air Force fighting capability is sustained and managed effectively.

##### **Air Force Audit Agency Headquarters (AFAA)**

The mission of the AFAA is to provide all levels of Air Force management with an independent, objective, and constructive evaluation of the effectiveness and efficiency with which managerial responsibilities (including financial, operational, and supporting activities) are carried out.

##### **Military Airlift Command (MAC) NCO Academy-West**

The mission of the MAC NCO Academy is to prepare selected noncommissioned officers (NCOs) for positions of greater responsibility by broadening their leadership and managerial capabilities and by expanding their perspective of the military profession. This is accomplished through a five-week in-resident course of instruction.

### **Headquarters, Ballistic Missile Organization (BMO)**

The mission of the BMO, formerly the Ballistic Systems Division, is to plan, implement, and manage programs to acquire ballistic missile systems and subsystems; support equipment and related hardware; provide for the alteration of missile sites and launch facilities; and discharge Air Force responsibilities as executive agent for designated Air Force, DOD, and international missile programs.

### **22nd Air Force NCO Leadership School**

The mission of the 22nd Air Force NCO Leadership School is to prepare selected NCO's in grades E-4 and E-5 for positions of greater responsibility by creating an awareness of their full responsibilities and broadening their leadership and managerial capabilities so they may fulfill their proper role with the Air Force. The school's primary responsibility is to 22nd Air Force and associated units of MAC.

### **445th Military Airlift Wing (MAW) Reserve Associate Unit**

The mission of the 445th MAW Reserve Associate Unit is to provide an additional source for both aircrew and maintenance personnel. The 445th MAW presently flies one third of the world-wide missions originating from Norton AFB. The 445th MAW is one of the largest Air Force Reserve units in the United States with over 3,000 assigned personnel.

### **Headquarters Aerospace Audiovisual Service (AAVS)**

The headquarters for AAVS arrived at Norton AFB in 1968 and was established to provide audiovisual services and products to meet the requirements of the Secretary of the Air Force, HQ USAF, the major commands, and separate operating agencies.

### **1965th Communications Squadron (AFCS)**

The 1965th Communications Squadron performs a three-fold mission at Norton AFB. It is responsible for meeting the communication needs of the 63rd MAW, operating the Defense Communications Agency's AUTODIN Switching Center, and providing all on-base communications and navigational aids facilities.

### **3562nd Recruiting Squadron**

The 3562nd Recruiting Squadron headquartered at Norton AFB is one of 32 recruiting squadrons nationwide. The squadron headquarters directs recruiting activities; provides logistics, advertising, personnel, and administrative support; and monitors production for more than 80 field recruiters.

#### **Detachment 505, 3754st Field Training Squadron**

Field Training Detachment 505 was established to provide maintenance training for the 63rd MAW and organizations assigned to it. In addition to the 63rd MAW, Detachment 505 provides training to units of MAC, Air Training Command, detached units of MAC, transient students en route to MAC west coast assignment, Air Defense Command, Air Force Reserves, and Navy. Training is accomplished through classroom instruction and hands-on training. Hands-on training is attained through the use of mobile training sets or operational equipment located at the host organization work center.

#### **Missile Storage and Maintenance Division**

The Missile Storage and Maintenance Division is an element of the Directorate of Maintenance at McClellan AFB, California. Its primary mission is storage, maintenance, and shipment of Atlas and Thor missiles to the various sites and parent organizations. This support consists of maintenance, storage, corrosion prevention, inspection, receiving, and shipping of Atlas, Thor, and Titan II missiles; rocket engines; and related aerospace-ground equipment and airborne components.

#### **Detachment 14, 17th Weather Squadron**

Detachment 14, 17th Weather Squadron provides 24-hour observing and forecasting support to Norton AFB. Detachment 14 provides weather briefings to C-141, C-12, and C-21 aircrews; issues weather advisories and weather warnings for resource protection; and provides data for the Automated Weather Network.

#### **Headquarters Air Force Office of Special Investigations (AFOSI), District 18**

The mission of AFOSI is to provide criminal, counterintelligence, internal security, and special investigative services to all Air Force activities located in 12 counties in southern California and 9 in Nevada; to perform distinguished visitors protection services and operations; to collect, analyze, and disseminate information of investigative and counterintelligence significance; and to collect and report information that is pertinent to base activities.

#### **Detachment 10, 1600th Management Engineering Squadron**

This organization advises and assists HQ AAVS and the 63rd MAW commander and staff on all matters related to organization, manpower allocations and programs, manpower utilization practices, and management improvement. It is responsible for standards development activities directed by HQ MAC.

### **Detachment 42, Sacramento Air Logistics Center**

Detachment 42 is a project support office (PSO) assigned to Headquarters, Sacramento Air Logistics Center, at McClellan AFB, California. The PSO is tasked with the responsibility of providing integrated logistical support to special Air Force programs and projects. As a logistics depot, the PSO performs logistics support functions common to support functions provided by the Air Force logistics centers. Support functions rendered include provisioning and procurement, inventory control, technical data and cataloging, financial management, transportation, and storage.

### **Defense Reutilization and Marketing Office (DRMO)**

The mission of the DRMO is to provide for control, warehousing, and preparation of excess and surplus personal property for reuse, donation, sale, or other disposition. This includes the storage and disposal of hazardous waste.

### **Military Air Traffic Coordination Office**

The Military Air Traffic Coordination Office serves as the principal element at the aerial port with liaison between the APOE and the shipper services and agencies in regard to operational matters. The office also ensures the orderly flow of military traffic (cargo and mail) into the airlift system.

## **A.2 FACILITY USE BY ORGANIZATIONS AT NORTON AFB**

Table A.1 provides a listing of all major organizations at Norton AFB along with estimates of the floor space and facilities occupied by them.

## **A.3 AIRCRAFT CURRENTLY ASSIGNED TO NORTON AFB**

### **C-141B Starlifter**

The C-141 Starlifter is the "work horse" of MAC. Along with the C-5 Galaxy, the C-141 forms MAC's existing intertheater airlift force. The Starlifter fulfills a vast spectrum of airlift requirements. MAC uses the C-141 to airlift combat forces over long distances; inject those forces, their equipment, and cargo either by airland or airdrop; resupply employed forces; and extract the sick and wounded from the hostile area to advanced medical facilities. The B model of the C-141 Starlifter is a C-141A model modified with a longer fuselage and an in-flight refueling capability.

TABLE A.1 Facility Use by Organizations at Norton AFB<sup>a</sup>

Organization	Floor Space (ft <sup>2</sup> )	Facilities Assigned <sup>b</sup>
<u>63rd Military Airlift Wing</u>	2,121,300	
Command Office	30,600	2, 673
Public Affairs	NA	2
Safety	NA	538
Operations: 14th, 15th, 52nd, and 53rd Military Airlift Squad.	28,300	107, 537
Maintenance	103,500	795, 796
63rd Avionics Maint. Squad.	89,200	126, 701, 752, 757
63rd Field Maint. Squad.	831,800	108, 119, 669, 695, 726, 736, 763
63rd Organizational Maint. Squad.	24,700	120
Resource Management		
63rd Supply Squad.	359,000	422, 460, 514, 542, 545, 548, 637, 802, 803, 819, 854, 856, 858, 912
Base Contracting	39,900	538
Comptroller	20,500	505
Transportation	65,600	313, 330, 332, 333, 338, 339, 341, 342, 345, 820
63rd Aerial Port Squad.	528,200	118, 512, 558, 673, 719, 747, 749
<u>63rd Air Base Group (Base Operating Support)</u>	825,300	
Command Office	57,200	2, 109, 479, 534
Chaplain	15,600	104
Administration	27,700	455, 707
Personnel Office	87,300	502, 505, 537
Disaster Preparedness	3,600	537, 538
Staff Judge Advocate	7,400	538
Social Actions	4,900	538
63rd Civil Engineering Squad.	153,600	111, 112, 245, 299, 335, 401, 403, 404, 407, 409, 412, 414, 417, 418, 427, 428, 618, 657, 680, 705, 1264
Security Police	41,300	11, 44, 256, 423, 499, 608, 609, 655
Family Support Center	NA	609
Morale, Welfare, and Recreation	244,700	6, 7, 10, 23, 24, 48, 125, 142, 178, 181, 182, 190, 302, 475, 539, 615, 655, 707, 814, 818
Services	182,000	144, 145, 169, 425, 503, 512, 515, 517, 561
<u>USAF Clinic Norton</u>	100,900	100, 101, 103, 106, 421, 534, 912

TABLE A.1 (Cont'd)

Organization	Floor Space (ft <sup>2</sup> )	Facilities Assigned <sup>b</sup>
<u>445th Military Airlift Wing</u> <u>(AF Reserve Associate)</u>	75,700	466, 518, 534, 536, 702, 742, 763, 795, 965
<u>Other Tenant Organizations</u>	1,628,500	
AF Audit Agency HQ	43,700	527, 528
AF Office of Special Investigations, District 18 and Det. 1840	18,700	534
AF Communications Squad., CA Region	237,100	56, 518, 538, 575
3562nd AF Recruiting Squad.	NA	518, 538
Defense Reutilization and Marketing Office	144,100	948, 961-964, 967, 968, 970, 976, 995
Det. 14, 17th Weather Squad.	2,400	795
1835th Electronics Installation Squad. <sup>c</sup>	9,200	122, 645, 658
1965th Communications Squad.	108,700	168, 324, 424, 468, 477, 518, 520, 532, 533, 638, 795, 810, 831, 844, 864
Det. 505, 3754th Field Training Squad.	29,900	730
Defense Contract Admin. Service	1,500	210
22nd AF NCO Leadership School	24,700	128
U.S. Post Office Center	6,200	455
Army-Air Force Exchange Service South CA Area Exchange	164,200	58, 419, 512, 518, 533, 534, 620, 635, 673, 918
Norton Distribution Center	139,300	552, 555
Norton AFB Credit Union	4,900	21
Civil Air Patrol, Group 18	1,800	233
U.S. Army Medical Department Activity (Animal Clinic)	1,000	474
AF Inspection and Safety Center	94,100	83, 537, 538, 918, 984
1380th School Squad., MAC NCO Academy-W	43,100	491
Sacramento Air Logistics Center, Det. 42	249,000	915, 928, 938
2762nd AFLC Logistics Squad., Det. 6	304,900	535, 574, 924, 925, 932, 935, 966
Aerospace Audiovisual Service, HQ and 1352nd Squad.	288,700	226, 227, 228, 248, 250
<u>Total for Above Organizations</u>	5,336,400	
<u>Organizations to Be Retained at Norton AFB</u>		
Ballistic Missile Organization	523,300	520, 522-527, 950-953

<sup>a</sup>Abbreviations used: CA - California, Det. - Detachment, HQ - Headquarters, Maint. - Maintenance, NCO - Noncommissioned Officer, Squad. - Squadron(s).

<sup>b</sup>Some assignments are partial (i.e., more than one organization shares a facility).

<sup>c</sup>Deactivated.

Source: Wright (1989).

**C-21A**

The primary mission of the C-21A is operational support airlift. It provides rapid transportation of high-priority DOD personnel and cargo during peace and war. The C-21A can also be equipped for aeromedical evacuation. During contingencies and in wartime, the aircraft can deploy overseas in support of theater commanders. The C-21A is a twin turbofan engine aircraft used for cargo and passenger airlift. The safety and operational capability of the C-21A is increased by the autopilot, color weather radar, and tactical air navigation system (TACAN), as well as high-frequency (HF), very-high-frequency (VHF), and ultra-high-frequency (UHF) radios.

**C-12F**

The C-12F is a twin-turboprop operational support aircraft used for cargo and passenger airlift and as a trainer for newly rated pilots. The C-12F is equipped with weather radar; an autopilot; tactical air navigation system (TACAN); and HF, VHF, and UHF radios to provide for increased safety and operational capability.

**A.4 PESTICIDE AND HERBICIDE USE AT NORTON AFB**

Table A.2 identifies the pesticides and herbicides currently used at Norton AFB.

**TABLE A.2 Pesticides Currently Listed in the Norton AFB  
Pest Management Plan**

Trade or Common Name	Pest Controlled
Diazinon	Cockroaches, cutworms, spiders
Strychnine	Gophers, ground squirrels
Smoke bomb	Ground squirrels
Zinc phosphate	Ground squirrels
Diphacinone	Ground squirrels, pigeons
Bayon	Cockroaches
Phostoxin	Ground squirrels, gophers
Talon G	Rats, mice
ULD BP-100	Crawling and flying insects
Ficam W	Drywood termites, fleas, cockroaches, spiders
PT 270	Drywood termites
Glyphosate	Grasses
Amrol-90	Weeds, grasses
Diuron	Weeds, grasses
Wasp Freeze Pyrethrum	Wasps
Simazine 80	Weeds, grasses
Malathion	Mosquito larvae, aphids, fleas
Sevin 80W	Aphids
Sevin	Brown dog ticks
Diazinon 4E	Brown dog ticks, spiders
Diquat	Aquatic weeds
Balan	Crabgrass
Proturf System	Fungi
Chloronab	Fungi
Dursban M	Cockroaches
Chloroaniline	Brown patch
Daconil 2787	Dollar spot
Betasan	Crabgrass
Oust (sulfometuron)	Weeds, grasses
Dursban	Cockroaches
Combat	Cockroaches

Source: Maneri (1989).

**APPENDIX B:**  
**SUPPLEMENTARY INFORMATION FOR**  
**SAN BERNARDINO AND RIVERSIDE COUNTIES**

B-2

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**APPENDIX B:**  
**SUPPLEMENTARY INFORMATION FOR**  
**SAN BERNARDINO AND RIVERSIDE COUNTIES**

**B.1 AIR QUALITY**

Tables B.1-B.3 provide summaries of the ambient air quality monitored at the San Bernardino, Redlands, and Riverside monitoring stations, respectively, for the period 1984-1988. The tables provide the data for each pollutant monitored, as well as the corresponding state and national standards (CAAQS and NAAQS, respectively) for comparison.

The California standards for 24-hour  $\text{SO}_2$  concentrations, lead, and sulfate are values that are not to be equaled or exceeded. The other California standards -- those for ozone, CO,  $\text{NO}_2$ , 1-hour  $\text{SO}_2$  concentrations, and  $\text{PM}_{10}$  -- are values that are not to be exceeded.

National standards -- except those for ozone and  $\text{PM}_{10}$  and those based on annual averages -- are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The 24-hour  $\text{PM}_{10}$  standard is attained when the expected number of days with a 24-hour average concentration above the standard is equal to or less than one. The annual arithmetic mean  $\text{PM}_{10}$  standards are attained when the annual arithmetic mean concentrations are equal to or less than the standard.

**B.2 TRANSPORTATION**

Table B.8 presents the level-of-service classification system used in the analysis of transportation impacts due to altered commuting patterns on local roads in the Norton AFB area (Sec. 4.3.5.3). The system is based on three classes of streets: Class I streets have a free-flow speed range of 35-45 mi/h and typical speeds of 40 mi/h, Class II streets have a free-flow speed range of 30-35 mi/h and typical speeds of 33 mi/h, and Class III streets have a free-flow speed range of 25-35 mi/h and typical speeds of 27 mi/h (National Transportation Research Board 1986).

**TABLE B.1 Summary of Ambient Air Quality Data from the San Bernardino Monitoring Station, 1984-1988**

Pollu- tant	Parameter Measured	Unit	Averaging Time	1986 <sup>a</sup>				Standard			
				1988	1987	4th St.	3rd St.	1985	1984	CAAQS	NAAQS
Ozone	1st high	ppm	1 hour	0.28	0.25	0.30 <sup>b</sup>	0.15	0.27	0.30	0.09	0.12
	2nd high	ppm	1 hour	0.26	0.25	0.19 <sup>b</sup>	0.19	0.26	0.28		
	Days ≥ CAAQS	No.	1 hour	173	166	116	33	155	173		
	Days > NAAQS	No.	1 hour	121	117	88	20	111	125		
CO	1st high	ppm	1 hour	9.0	11.0	9.0 <sup>b</sup>	-	9.0 <sup>b</sup>	9.0	20	35
	2nd high	ppm	1 hour	9.0	10.0	9.0	-	9.0 <sup>b</sup>	9.0		
NO <sub>2</sub>	1st high	ppm	8 hours	7.6	6.7	6.7 <sup>b</sup>	-	5.3 <sup>b</sup>	5.1	9.0	9.0
	2nd high	ppm	8 hours	7.0	6.4	6.3 <sup>b</sup>	-	4.4 <sup>b</sup>	5.0		
	1st high	ppm	1 hour	0.19	0.19	0.16 <sup>b</sup>	-	0.15 <sup>b</sup>	0.20	0.25	-
	2nd high	ppm	1 hour	0.17	0.17	16 <sup>b</sup>	-	0.14 <sup>b</sup>	0.16		
SO <sub>2</sub>	Arithmetic mean	ppm	1 year	0.042	0.043	0.043 <sup>b</sup>	-	0.038 <sup>b</sup>	0.040	-	0.05
	1st high	ppm	1 hour	0.02	0.03	0.05 <sup>b</sup>	-	0.02 <sup>b</sup>	0.03	0.25	-
	2nd high	ppm	1 hour	0.02	0.03	0.04 <sup>b</sup>	-	0.02 <sup>b</sup>	0.02		
	1st high	ppm	24 hours	0.012	0.012	0.012 <sup>b</sup>	-	0.010 <sup>b</sup>	0.010	0.05	0.14
	2nd high	ppm	24 hours	0.009	0.011	0.010 <sup>b</sup>	-	0.009 <sup>b</sup>	0.010		
	Arithmetic mean	ppm	1 year	0.002	0.002	0.003 <sup>b</sup>	-	0.002 <sup>b</sup>	0.002	-	0.03

TABLE B.1 (Cont'd)

Pollu- tant	Parameter Measured	Unit	Averaging Time	1986 <sup>a</sup>				Standard			
				1988	1987	4th St.	3rd St.	1985	1984	CAAQS	NAAQS
PM <sub>10</sub>	1st high	µg/m <sup>3</sup>	24 hours	289	211	285	136	-	-	50	150
	2nd high	µg/m <sup>3</sup>	24 hours	171	160	157	129	-	-		
	Samples > CAAQS	No.	24 hours	40	36	20	6	-	-		
	Samples > NAAQS	No.	24 hours	3	2	2	0	-	-		
	Observations			56	61	29	6	-	-		
	Geometric mean	µg/m <sup>3</sup>	1 year	66.8	55.2	66.4 <sup>b</sup>	111.2	-	-	30 <sup>c</sup>	-
	Arithmetic mean <sup>d</sup>	µg/m <sup>3</sup>	1 year	80.2	70.0	78.7 <sup>b</sup>	112.3	-	-	-	50
Pb	1st high	µg/m <sup>3</sup>	30 days	0.12	0.15	0.20	0.23	0.31	0.47	1.5	-
	1st high	µg/m <sup>3</sup>	cal. qtr.	0.08	0.13	0.19 <sup>b</sup>	0.15	0.20	0.37	-	1.5
SO <sub>4</sub>	1st high	µg/m <sup>3</sup>	24 hours	15.8	17.6	17.8	14.6	19.4	23.4	25	-
	2nd high	µg/m <sup>3</sup>	24 hours	15.0	13.7	14.6	12.9	18.9	17.5		

<sup>a</sup>The San Bernardino monitoring station was moved from East 3rd Street to 4th Street in 1986. The first column under 1986 shows the data collected at the new location, and the second column at the old location.

<sup>b</sup>Data presented are valid, but incomplete in that an insufficient number of valid data points were collected to meet EPA or CARB criteria for representativeness.

<sup>c</sup>Geometric mean of all reported values taken during the year.

<sup>d</sup>Arithmetic mean of the quarterly arithmetic means for the four calendar quarters of the year.

Source: CARB (1984-1988).

TABLE B.2 Summary of Ambient Air Quality Data from the Redlands Monitoring Station, 1984-1988

Pollutant	Parameter Measured	Unit	Averaging Time	1986 <sup>a</sup>					Standard	
				1988	1987	Grove	D. St.	1985	1984	CAAQS NAAQS
Ozone	1st high	ppm	1 hour	0.29	0.24	0.29 <sup>b</sup>	0.22	0.33	0.29	0.09
	2nd high	ppm	1 hour	0.28	0.23	0.27 <sup>b</sup>	0.16	0.30	0.29	0.12
	Days ≥ CAAQS	No.	1 hour	176	161	133	11	158	160	
	Days > NAAQS	No.	1 hour	130	120	90	3	113	116	
CO	1st high	ppm	1 hour	-	-	-	-	-	2.0 <sup>b</sup>	35
	2nd high	ppm	1 hour	-	-	-	-	-	2.0 <sup>b</sup>	
	1st high	ppm	8 hours	-	-	-	-	-	0.9 <sup>b</sup>	9.0
	2nd high	ppm	8 hours	-	-	-	-	-	0.3 <sup>b</sup>	
Pb	1st high	µg/m <sup>3</sup>	30 days	-	-	0.10	-	0.19	0.30	1.5
	1st high	µg/m <sup>3</sup>	cal. qtr.	-	-	0.08 <sup>b</sup>	-	0.15	0.23	-
SO <sub>4</sub>	1st high	µg/m <sup>3</sup>	24 hours	-	-	9.9	-	16.2	21.0	25
	2nd high	µg/m <sup>3</sup>	24 hours	-	-	9.8	-	14.8	15.0	-

<sup>a</sup>The Redlands monitoring station was moved from the University of Grove to Dearborn Street in 1986. The first column under 1986 shows the data collected at the new location, and the second column at the old location.

<sup>b</sup>Data presented are valid, but incomplete in that an insufficient number of valid data points were collected to meet EPA or CARB criteria for representativeness.

Source: CARB (1984-1988).

TABLE B.3 Summary of Ambient Air Quality Data from the Riverside (Rubidoux) Monitoring Station, 1984-1988

Pollu- tant	Parameter Measured	Unit	Averaging Time	1984-1988					Standard	
				1988	1987	1986	1985	1984	CAAQS	NAAQS
Ozone	1st high	ppm	1 hour	0.28	0.29	0.25	0.35	0.32	0.09	0.12
	2nd high	ppm	1 hour	0.25	0.27	0.25	0.34	0.32		
	Days $\geq$ CAAQS	No.	1 hour	178	168	161	173	176		
	Days > NAAQS	No.	1 hour	123	113	106	125	127		
CO	1st high	ppm	1 hour	9.0	9.0	9.0	8.0	8.0	20	35
	2nd high	ppm	1 hour	9.0	8.0	8.0	7.0	8.0		
NO <sub>2</sub>	1st high	ppm	8 hours	6.8	6.1	6.0	5.7	6.3	9.0	9.0
	2nd high	ppm	8 hours	5.9	5.9	5.8	5.6	6.0		
	1st high	ppm	1 hour	0.19	0.21	0.16	0.16	0.17	0.25	-
	2nd high	ppm	1 hour	0.18	0.17	0.15	0.14	0.16		
SO <sub>2</sub>	Arithmetic mean	ppm	1 year	0.037	0.027	0.032	0.035	0.035	-	0.05
	1st high	ppm	1 hour	0.02	0.02	0.02	0.02	0.02	0.25	-
	2nd high	ppm	1 hour	0.02	0.02	0.02	0.02	0.02		
	1st high	ppm	24 hours	0.012	0.009	0.008	0.010	0.011	0.05	0.14
SO <sub>2</sub>	2nd high	ppm	24 hours	0.011	0.009	0.008	0.010	0.010		
	Arithmetic mean	ppm	1 year	0.001	0.001	0.001	0.001	0.002	-	0.03

TABLE B.3 (Cont'd)

Pollu- tant	Parameter Measured	Unit	Averaging Time	Standard						
				1988	1987	1986	1985	1984	CAAQS	NAAQS
PM <sub>10</sub>	1st high	µg/m <sup>3</sup>	24 hours	252	219	294	208	129	50	150
	2nd high	µg/m <sup>3</sup>	24 hours	177	210	176	187	112		
	Samples > CAAQS	No.	24 hours	51	46	48	46	4		
	Samples > NAAQS	No.	24 hours	7	7	5	11	0		
	Observations	No.		61	60	61	61	10		
Pb	Geometric mean	µg/m <sup>3</sup>	1 year	81.8	73.5	74.1	80.9	41.2 <sup>a</sup>	30	-
	Arithmetic mean	µg/m <sup>3</sup>	1 year	94.9	89.6	86.0	96.1	53.4 <sup>a</sup>	-	150
	1st high	µg/m <sup>3</sup>	30 days	0.10	0.14	0.17	0.27	0.54	1.5	-
	1st high	µg/m <sup>3</sup>	cal. qtr.	0.07	0.12	0.16	0.22	0.40	-	1.5
SO <sub>4</sub>	1st high	µg/m <sup>3</sup>	24 hours	23.6	16.1	18.4	21.0	22.8	25	-
	2nd high	µg/m <sup>3</sup>	24 hours	13.1	13.1	15.6	17.4	16.8		

<sup>a</sup>Data presented are valid, but incomplete in that an insufficient number of valid data points were collected to meet EPA or CARB criteria for representativeness.

Source: CARB (1984-1988).

**TABLE B.4 Interpretation of Level of Service for Urban Streets**

Level of Service <sup>a</sup>	Avg. Travel Speed by Class (mi/h)			Interpretation
	I	II	III	
A	≥35	≥30	≥25	Primarily free flow at average travel speeds about 90% of the free-flow speed. Maneuverability within the traffic stream is completely unimpeded. Stopped delay at signaled intersections is minimal.
B	≥28	≥24	≥19	Reasonably unimpeded operations at average travel speeds about 70% of the free-flow speed. Maneuverability within the traffic stream is only slightly restricted and stopped delays are not bothersome. Drivers are not generally subjected to appreciable tension.
C	≥22	≥18	≥13	Represents stable operations. Maneuverability and lane changes in midblock locations maybe more restricted than in level B; longer queues or adverse signal coordination may contribute to lower average travel speeds, about 50% of the average free-flow speed. Drivers will experience appreciable tension.
D	≥17	≥14	≥9	Service at a level where small increases in flow may cause substantial increases in approach delay and, hence, decreases in arterial speed. Causes include adverse signal progression, inappropriate signal timing, high volumes, or some combination. Average travel speeds are about 40% of free-flow speeds.
E	≥13	≥10	≥7	Significant approach delays and average travel speeds 33% or less of the free-flow speed. Causes include some combination of adverse progression, high signal density, extensive queuing at critical intersections, and inappropriate signal timing.
F	≥13	≥10	≥7	Arterial flow at extremely low speeds, 25-30% of the free-flow speed. Intersection congestion and high approach density are likely at critical signaled locations. Adverse progression frequently contributes to this condition.

<sup>a</sup>As defined in Transportation Research Board (1986).

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**APPENDIX C:**  
**FAUNA AND FLORA AT NORTON AFB**

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## APPENDIX C:

## FAUNA AND FLORA AT NORTON AFB

## C.1 BIRDS OBSERVED AT NORTON AFB

<u>Order and Common Name</u>	<u>Zoological Name</u>
Podicipediformes (grebes)	
Pied-billed Grebe	<i>Podilymbus podiceps</i>
Ciconiiformes (herons and egrets)	
Snowy Egret	<i>Egretta thula</i>
Great Blue Heron	<i>Ardea herodias</i>
Anseriformes (waterfowl)	
Mallard	<i>Anas platyrhynchos</i>
Gadwall	<i>Anas strepera</i>
Green-winged Teal	<i>Anas crecca</i>
American Wigeon	<i>Anas americana</i>
Northern Pintail	<i>Anas acuta</i>
Cinnamon Teal	<i>Anas cyanoptera</i>
Gruiformes (cranes and allies)	
American Coot	<i>Fulica americana</i>
Charadriiformes (shorebirds and gulls)	
Kildeer	<i>Charadrius vociferus</i>
Spotted Sandpiper	<i>Actitis macularia</i>
Ring-billed Gull	<i>Larus delawarensis</i>
Herring Gull	<i>Larus argentatus</i>
California Gull	<i>Larus californicus</i>
Falconiformes (birds of prey)	
Turkey Vulture	<i>Cathartes aura</i>
Black-shouldered Kite	<i>Elanus caeruleus</i>
Northern Harrier	<i>Circus cyaneus</i>
Cooper's Hawk	<i>Accipiter cooperii</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
American Kestrel	<i>Falco sparverius</i>

<u>Order and Common Name</u>	<u>Zoological Name</u>
Galliformes (domestic and game birds)	
California Quail	<i>Callipepla californicus</i>
Columbiformes (pigeons and doves)	
Band-tailed Pigeon	<i>Columba fasciata</i>
Rock Dove	<i>Columba livia</i>
Mourning Dove	<i>Zenaida macroura</i>
Spotted Dove	<i>Streptopelia chinensis</i>
Cuculiformes (cuckoos and roadrunners)	
Greater Roadrunner	<i>Geococcyx californianus</i>
Stringiformes (owls)	
Burrowing Owl	<i>Athene cunicularia</i>
Caprimulgiformes (goatsuckers)	
Lesser Nighthawk	<i>Chordeiles acutipennis</i>
Apodiformes (swifts and hummingbirds)	
White-throated Swift	<i>Aeronautes saxatalis</i>
Anna's Hummingbird	<i>Calypte anna</i>
Piciformes (woodpeckers)	
Northern Flicker	<i>Colaptes auratus</i>
Passeriformes (perching birds)	
Black Phoebe	<i>Sayornis nigricans</i>
Horned Lark	<i>Eromophila alpestris</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Scrub Jay	<i>Aphelocoma coerulescens</i>
American Crow	<i>Corvus brachyrhynchos</i>
Common Raven	<i>Corvus corax</i>
Bushtit	<i>Psaltiriparus minimus</i>
Brown Creeper	<i>Certhia americana</i>
House Wren	<i>Troglodytes aedon</i>
Cactus Wren	<i>Campylorhynchus brunneicapillus</i>
Ruby-crowned Kinglet	<i>Regulus calendula</i>
Western Bluebird	<i>Sialia mexicana</i>

<u>Order and Common Name</u>	<u>Zoological Name</u>
<b>Passeriformes (cont'd)</b>	
Mountain Bluebird	<i>Sialia currucoides</i>
American Robin	<i>Turdus migratorius</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Northern Mockingbird	<i>Mimus polyglottos</i>
European Starling	<i>Sturnus vulgaris</i>
Orange-crowned Warbler	<i>Vermivora celata</i>

## **B.2 PLANT SPECIES THAT CAN BE FOUND AT NORTON AFB**

The following lists of plant species at Norton AFB were developed from the 1988 Norton Land Management Plan.

### **Ground Covers**

*Asparagus spengeri*  
Ice Plant (several species)  
*Gazania uniflora leycoleans* (Trailing Gazania)  
*Potentilla verna*  
*Osteospermum fruticosum* (African Trailing Daisy)  
*Pelargonium peltatum* (Ivy Geranium)  
*Hedera helix* (English Ivy)  
*Juniperus* (Prostrate forms: Shore, Tams, Bar harbor, etc.)  
*Rosmarinus officinalis prostratus* (Dwarf Rosemary)  
*Baccharis pilularis* (Coyote Brush)

### **Shrubs**

*Dodonaea viscosa "Purpurea"* (Hopseed Bush)  
*Ilex*, several species (Holly)  
*Callistemon citrinus* (Lemon Bottlebrush)  
*Callistemon viminalis* (Weeping Bottlebrush)  
*Photonia fraseri* (Red Lead Photinia)  
*Raphiolepis indica* (Indian Hawthorne)  
*Verburnum tinus* (Laurustinus)  
*Mahonia aquifolium* (Oregon Grape)  
*Mahonia limariifolia*  
*Nandina domestica* (Heavenly Bamboo)  
*Xylosma congestum* (Xylosma)  
*Heteromeles arbutiflora* (California Holly)

*Magnolia stellata* (Star Magnolia)  
*Cortaderia selloana* (Pampas Grass)

### Trees

*Acacia baileyana* (Fern Lead Acacia)  
*Albizia julibrissin* (Silk Tree)  
*Betula verrucosa* (European White Birch)  
*Cedrus deodara* (Deodar Cedar)  
*Ceratonia siliqua* (Carob, St. Johns' Bread)  
*Chamaerops humilis* (Mediterranean Fan Palm)  
*Cinnamomum camphora* (Camphor Tree)  
*Erythea edulis* (Guadalupe Palm)  
*Eucalyptus*, over 50 species  
*Fraxinus*, several species (Ash)  
*Jacaranda acutifolia* (Jacaranda)  
*Lagerstromia indica* (Crepe Myrtle)  
*Liquidambar styraciflua* (Liquidambar)  
*Magnolia grandifolia* (Southern Magnolia)  
*Olea europaea* (Olive)  
*Phoenix reclinata* (Clump Palm)  
*Pinus*, several species  
*Prunus*, several species  
*Platanus*, several species  
*Schinus terebinthifolius* (Brazilian Pepper Tree)  
*Trachycarpus fortunei* (Windmill Palm)  
*Umbellularia californica* (California Laurel)  
*Washington filifera* (California Fan Palm)

### Grasses, Legumes, and Weeds on Maintained Turf

<u>Botanical Name</u>	<u>Common Name</u>
<i>Cynodon dactylon</i>	Bermuda grass
<i>Poa annua</i>	Annual Bluegrass
<i>Agrostis palustris</i>	Creeping bentgrass
<i>Lolium perenna</i>	Perennial Ryegrass
<i>Poa pratensis</i>	Kentucky Bluegrass
<i>Trifolium repens</i>	White Clover
<i>Festuca rubus</i>	Creeping Red Fescue
<i>Lolium multiflorum</i>	Italian Ryegrass
<i>Festuca elatior</i>	Alta Fescue
<i>Paspalum dilatatum</i>	Dallisgrass
<i>Festuca rubus commutata</i>	Chewings Fescue
<i>Medicago lupulina</i>	Yellow Trefoil
<i>Plantago lanceolata</i>	Buckhorn

Botanical NameCommon Name

*Stellaria media*  
*Cerastium vulgatum*  
*Digitaria sanguinalis*  
*Taraxacum officinale*  
*Dichondra repens*  
*Polygonum aviculare*  
*Cyperus rotundus*  
*Plantago major*  
*Portulaca oleracea*  
*Rumex acetosella*  
*Amaranthus palmeri*  
*Achilea millefolium*  
*Holcus lanatus*  
*Oxalis corniculata*  
*Medicago hispida*

Annual Chickweed  
Mouse Ear Chickweed  
Crabgrass  
Dandelion  
Dichondra  
Knottweed  
Nutgrass  
Plantain  
Purslane  
Sorrell  
Amaranth  
Yarrow  
Velvetgrass  
Oxalis  
Burr Clover

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**APPENDIX D:**  
**Ldn METHODOLOGY**

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## APPENDIX D:

### Ldn METHODOLOGY

#### D.1 NOISE ENVIRONMENT DESCRIPTOR (Ldn)

The day-night average sound level (Ldn) metric for describing the noise environment was used to produce the noise contours presented in this assessment (Acoustical Society of America 1980). Efforts to provide a national uniform standard for noise assessment have resulted in adoption of Ldn by the U.S. Environmental Protection Agency (EPA) as the standard measure of noise for this procedure. It is used by numerous federal agencies, including the Department of Defense, Department of Housing and Urban Development, and the Federal Aviation Administration.

Use of the Ldn descriptor is a method of assessing the amount of exposure to aircraft noise and predicting the percentage of residents in a well-populated community that are *highly annoyed* (% HA) by the various levels of exposure (Committee on Hearing, Bioacoustics, and Mechanics 1977; Schultz 1978). The Ldn values used for planning purposes and for which contours are presented in this assessment are 65, 70, 75, 80, and 85 dB. Land use guidelines are based on the compatibility of various land uses with these exposure levels (U.S. Department of Defense 1964).

It is generally recognized that a noise environment descriptor should consider, in addition to the annoyance of a single event, the effect of repetition of such events and the time of day in which these events occur. Computation begins with a single-event energy descriptor and adds corrections for the number of events and the time of day. Since the primary noise impact relates to residential areas, nighttime events are considered more annoying than daytime events and are weighted 10 dB accordingly. The Ldn values are computed by first logarithmically summing the single-event energy values for all of the flight operations in a typical 24-hour day (after adding the 10-dB penalty to all nighttime-operation levels); then the average sound level is calculated for a 24-hour period.

As part of an extensive data-collection process, detailed information is gathered on the flight tracks flown by each type of aircraft assigned to the base and the number and time of day of flights on each of these tracks during a typical day. This information is used in conjunction with the single-event noise descriptor to produce Ldn values. These values are combined on an energy-summation basis to provide single Ldn values for the mix of aircraft operations at the base. Equal value points are connected to form the contour lines.

#### D.2 SINGLE-EVENT NOISE EVENT DESCRIPTOR (SEL)

The single-event noise energy descriptor used in the Ldn system is the sound exposure level (SEL). The SEL measure is an integration of the A-weighted sound pressure level over the time interval of a single event (such as an aircraft flyover), corrected to equivalent level for a reference period of 1 second. Frequency, magnitude,

and duration vary according to aircraft type, engine type, and power setting. Therefore, individual aircraft noise data are collected for various types of aircraft/engines at different power settings and phases of flight. SEL versus slant range values are derived from noise measurements made according to a source noise data acquisition plan developed by Bolt, Beranek and Newman, Inc., in conjunction with the Armstrong Aerospace Medical Research Laboratory (AAMRL) and carried out by AAMRL (Bishop and Galloway 1975). These standard-day, sea-level values form the basis for the individual-event noise descriptors at any location and are adjusted to the location by applying appropriate corrections for temperature, humidity, altitude, and variations from standard aircraft operating profiles and power settings.

Ground-to-ground sound propagation characteristics are used for ground run-up activities. Air-to-ground propagation characteristics are used whenever the aircraft is airborne and the line-of-sight from observer to aircraft is 7 degrees or greater above horizontal; if the line-of-sight is 4 degrees or less, ground-to-ground propagation characteristics are used. Between these angles, propagation characteristics are interpolated (Speakman et al. 1977).

In addition to use for assessing aircraft flight operations, the Ldn metric can also be used to assess aircraft and engine run-up noise emissions resulting from engine/aircraft maintenance checks on the ground. Sounds such as aircraft/engine ground run-up noise are essentially constant in level during each test run at a given power setting. Data on the orientation of the noise source, type of aircraft or engine, number of test runs on a typical day, the power settings used and their duration, and use of suppression devices are collected for each ground run-up test position. This information is processed along with *mean sound pressure level* (average-energy level) data to yield equivalent 1-second sound exposure levels, which are added (on an energy-summation basis) to the SEL levels generated by flight operations to produce Ldn contours reflecting the overall noise environment produced by both air and ground operations of aircraft.

### D.3 NOISE CONTOUR PRODUCTION

Data describing flight tracks, flight profiles, power settings, flight paths and profile utilization, and ground run-up information by type of aircraft/engine are assembled and processed for input into a central computer. Ldn contours are generated by the computer using the airfield-supplied operational data and the standard source-noise data corrected to local conditions. The computer system plots these contours, which are provided in the text.

### D.4 NOISEMAP COMPUTER PROGRAM

The Ldn methodology for military flight operations is implemented by use of the computer program NOISEMAP. NOISEMAP was initially developed in 1974 by the Air Force (Horonjeff et al. 1974) and utilizes a subsidiary code (OMEGA) to provide a file of military flight and ground maintenance operational data by aircraft type. The current versions of this code used for this study are OMEGA 10 and OMEGA 11.

## D.5 REFERENCES

Acoustical Society of America, 1980, *American National Standard Sound Level Description for Determination of Compatible Land Use*, ANSI S3.23-1980 (R1986), New York.

Bishop, D.E., and W.J. Galloway, 1975, *Community Noise Exposure Resulting from Aircraft Operations: Acquisition and Analysis of Aircraft Noise and Performance Data*, U.S. Air Force Aerospace Medical Research Laboratory Report AMRL-TR-73-107, Wright-Patterson Air Force Base, Dayton, Ohio, Aug.

Committee on Hearing, Bioacoustics, and Mechanics, Working Group 69, 1977, *Guidelines for Preparing Environmental Impact Statements on Noise*, National Research Council, National Academy of Sciences, Washington, D.C.

Horonjeff, R.D., R.R. Kandukuri, and N.H. Redingius, 1974, *Community Noise Exposure Resulting from Aircraft Operations: Computer Program Description*, Aerospace Medical Research Laboratory Report AMRL-TR-73-109, Wright-Patterson Air Force Base, Dayton, Ohio, prepared by Bolt Beranek and Newman, Inc., Canoga Park, Calif., Nov.

Schultz, T.J., 1978, *Synthesis of Social Surveys on Noise Annoyance*, J. of the Acoustical Society of America, 64:377-405.

Speakman, J.D., R.G. Powell, and J.N. Cole, 1977, *Community Noise Exposure Resulting from Aircraft Operations: Volume 1. Acoustic Data on Military Aircraft*, U.S. Air Force Aerospace Medical Research Laboratory Report AMRL-TR-73-110(1), Wright-Patterson Air Force Base, Dayton, Ohio, Nov.

U.S. Department of Defense, 1964, *Land Use Planning with Respect to Aircraft Noise*, Report AFM 86-5, TM 5-365, NAVDOCKS P-98, Washington, D.C., Oct. 1.

D-6

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E-1

**APPENDIX E:**  
**COMMENTS ON THE DEIS AND RESPONSES**

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**APPENDIX E:**  
**COMMENTS ON THE DEIS AND RESPONSES**

The final environment impact statement (FEIS) for the closure (withdrawal of units) of Norton Air Force Base (AFB), California, was prepared in response to changes in the actions to take place at Norton AFB and to comments received on the draft environmental impact statement (DEIS).

The DEIS was published in November 1989. Public hearings were held on December 13, 1989, at Norton AFB and the San Bernardino California City Hall to receive comments on the DEIS. During the two hearings, only one comment was presented orally. The presenter also provided identical written comments. The transcripts from the two hearings are reproduced in Appendix F.

Copies of the comment letters received during the public comment period for the DEIS are included in this FEIS. These letters and attachments have been reproduced from the best copy available for this purpose. The original letters and attachments are on file with Headquarters, Military Airlift Command, Scott Air Force Base, Illinois.

The letters have been arranged chronologically in order of receipt. Each letter has been assigned a number, and consecutive numbers have been assigned to individual comments contained in each letter. For example, the letter received from the City of Riverside has been identified as Letter No. 2, and the individual comments are designated as 2-1, 2-2, 2-3, etc. A written response has been provided for each comment, and these responses are designated as Response 2-1, Response 2-2, etc., to correspond to the respective comments. The letters and specific responses are placed side by side as much as possible so that the reader can easily locate the specific response to a given comment.

Two types of generic responses have been provided. If a comment merely states that the DEIS has been reviewed, then the appropriate response is "No response required." If a comment is made on some portion of the DEIS but does not ask for a clarification or more information, the appropriate response is "Comment noted." All other comments require specific responses.

The numbers used to identify the letters of comment are listed below in the order that they appear in the document.

Letter No.	Commenting Agency or Person	Page
1	Kathyrn Gualtieri, State Historic Preservation Officer	E-6
2	Bill D. Carnahan, Public Utilities Director, City of Riverside	E-8
3	Sandra L. Viera, Assistant Project Coordinator, County of San Bernardino	E-12
4	Kenneth D. Guidry, Chief, Water Resources Division, County of San Bernardino Environmental Public Works Agency	E-14
5	Jeffrey L. Shaw, Community Development Director, City of Redlands	E-16
6	Lisa Donnell, Senior Planner, City of Fontana	E-20
7	Kenneth W. Holt, Center for Environmental Health and Injury Control	E-22
8	Harvey J. Sawyer, State of California, Department of Transportation	E-24
9	Marshall W. Julian, City of San Bernardino	E-26
10	Sandy Hesnard, State of California, Department of Transportation, Division of Aeronautics	E-32
11	Federal Aviation Administration	E-34
12	State of California, Governor's Office, Office of Planning and Research	E-37
13	U.S. Environmental Protection Agency, Region 9	E-40

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STATE OF CALIFORNIA - THE RESOURCES AGENCY

GEORGE DEUKMEJIAN, Governor

## OFFICE OF HISTORIC PRESERVATION

## DEPARTMENT OF PARKS AND RECREATION

POST OFFICE BOX 942896  
SACRAMENTO, CALIFORNIA 94296-0001  
(916) 445-8006



USAF890427A  
December 5, 1989

Patricia Calliott  
Department of the Air Force  
HQ MAC/DEV, Building 1600  
Scott Air Force Base, IL 62225-5001

Re: Closure of Norton AFB

Dear Ms. Calliott:

Thank you for the opportunity to review the Draft Environmental Impact Statement for the closure of Norton Air Force Base.

1-1

As you have indicated in the document that we can expect to receive a separate submittal on the base closure's effect on historic properties, we have no comments on the DEIS at this time. When the documentation on historic properties is developed, we look forward to reviewing the undertaking in accordance with the procedures outlined in 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act.

Thank you for your cooperation. If you have any questions, please call staff historian Dorene Clement at (916) 322-9600.

Sincerely,

A handwritten signature in cursive script, appearing to read 'K. Gualtieri'.

Kathryn Gualtieri  
State Historic Preservation Officer

E-7

Response to 1-1:

No response required.

CITY OF *Riverside* PUBLIC UTILITIES DEPARTMENT 3900 Main Street Riverside, California 92522

December 8, 1989

BILL D. CARNAHAN  
Public Utilities Director

Ms. Patricia Calliott  
HQ MAC/DEV  
Building 600  
Scott Air Force Base, IL 62225-5001

Re: Draft Environmental Impact Statement  
for Base Closure -- Norton AFB

We have reviewed the Draft Environmental Impact Statement for the Closure (Withdrawal of Units) of Norton Air Force Base dated November, 1989. We are primarily concerned with the protracted cleanup effort of underground water contamination within Norton AFB. We are specifically concerned regarding the potential contamination of our water wells adjacent to the Base resulting from migration of underground contaminants from the Base.

The draft statement generally addresses the underground water contamination issue under Section 4. However, we have concerns regarding certain information contained in the Draft in relation to underground water contamination.

- 2-1 [ There appears to be an inconsistency regarding the amount of current groundwater used by the Base and Base Housing. On page 4-1 the amount reported is 190 million gals./year and on page 4-7 the amount is 890 million gals./year. This is confusing and we request that reduction of groundwater pumping within the Base should not occur until such time as all studies required in accordance with the Interagency Agreement are completed and effective mitigation measures are commenced to prevent contaminant migration from the Base.
- 2-2 [ On page 4-2 the document asserts ... "If contaminant levels are observed to change, consideration will be given to modeling groundwater contaminant transport to determine groundwater pumping or some other strategy, as an interim measure, to retard plume spread." We are concerned that this strategy may not be adequately responsive and that by waiting until contaminant spreading occurs, before deciding what actions to take, may result in contamination of our wells. This is a vital issue to us and we emphatically believe that the Air Force, Environmental Protection Agency,

Response to 2-1:

The value on page 4-1 is incorrect and should be 890 million gal/year. This has been corrected and is now consistent with the value found on page 4-8.

The aquifer that supplies water for the base is considerably deeper (900 to 1200 ft) than the aquifers where the contaminants are presently a concern. The pumping rate in the lower aquifer likely has minimal influence on the horizontal flow in the upper aquifer. If reduced pumping occurs due to decreased use, this may help prevent vertical migration of contaminants to the lower aquifers. The hydrogeologic relationship between the aquifers will be defined in the Remedial Investigation/Feasibility Study (RI/FS) in the Installation Restoration Program (IRP).

Response to 2-2:

Norton Air Force Base (AFB) is implementing interim measures to retard plume spread when contaminants are detected to be migrating from the source. Groundwater removed as part of these measures will be treated to remove contaminants and disposed of in accordance with environmental regulations. Any interim action will be carried out under the terms of the Interagency Agreement (IAG).

Ms. Patricia Calliott  
December 8, 1989

[and State Department of Health Services must take appropriate and timely action to protect against any contamination of our wells.


2-3 [ We are concerned regarding what is contained in the report in connection with existing underground storage tanks. In particular, on page 3-12 it is stated, "As soon as the tank tightness testing results are available, the Air Force will develop a plan to manage the tanks. This plan will be submitted for approval to San Bernardino County officials, the regulatory authority for this issue."

2-4 [ We believe the report should contain effective mitigation measures in the event the tanks are found to have leaked or are leaking. Tanks that are found to be leaking should immediately be pumped empty and the contaminated soil adjacent to, and under the tanks, should be removed.

2-5 [ On page 4-3 the report further states, "Tanks that have corrosion protection and meet other standards for upgraded USTs can remain 'temporarily' closed indefinitely." Our concern is who will adequately monitor the corrosion protection systems after Base closure. We believe it to be superior if the underground tanks that do not continue to be utilized after Base closure be either removed, or appropriately back-filled in accordance with State standards.

We thank the Department of Air Force for providing us with the opportunity to review and to provide comments regarding the draft report.

Sincerely,



Bill D. Carnahan  
Public Utilities Director

xc: Belinda Walker, Norton AFB  
Lt. Mark Wright, Norton AFB  
Michael Flaherty, EPA  
Steve Overman, RWQCB  
Larry Rowe, EVWD  
Joe Stejskal, City of San Bernardino  
Tony Sedano, S.S.B.C.W.D.

BDC/DVG/dh

Response to 2-3:

No response required.

Response to 2-4:

The Air Force plan to manage existing underground storage tanks will address remedial action in the event that the tanks are found to leak or to have leaked. Action will be taken to empty the tanks, if feasible, and plans will be implemented to remove contaminated soil beneath the tanks as part of the Air Force cleanup program.

Response to 2-5:

After the Air Force has disposed of the base, it is the responsibility of the new owners of the property, facilities, tanks, etc., to monitor corrosion-control systems and perform needed tank tightness and general upgrading to meet Environmental Protection Agency (EPA)/state tank standards. It is the responsibility of the new owner(s), if they decide the tanks are no longer needed, to then remove and backfill these tank systems.



HARRY M. MAYS  
County Administrative Officer

**COUNTY OF  
SAN BERNARDINO**

**County Administrative Office**

No. 1 Arrowhead Plaza, 5th Floor  
385 North Arrowhead Avenue  
San Bernardino, CA 92415-0120  
(714) 387-5418  
Telecopier (714) 387-5430

**BOARD OF SUPERVISORS**

Marsha Tuttle	First District
Jon D. Mikels	Second District
Barbara Gram-Riordan (Chairman)	Third District
Larry Walker	Fourth District
Robert J. Hammock	Fifth District

December 18, 1989

Ms. Pat Calliott  
HQ MAC/DEV  
Scott Air Force Base, IL 62225-5001

Dear Ms. Calliott:

3-1 [ This letter is to confirm my conversation with Dr. Marmer, regarding the Draft Environmental Impact Statement, at the December 15, 1989, EIS meeting on the closure of Norton Air Force Base. The Base Reuse Office would like to have the map on page 1-5, Figure 1.3, Source Sullivan Publications, Inc., 1988, replaced with an updated map of the area surrounding the Norton Air Force Base.

Enclosed is the updated map of the same area for replacement. The colored areas are clearly marked and the white areas are San Bernardino County.

Your assistance in this matter is appreciated. Should you require further information concerning my request, please contact me at (714) 387-8916.

Sincerely,

**SANDRA L. VIERA**  
Assistant Project Coordinator

SV:rm

SLVTRMAP

E-13

Response to 3-1:

Figure 1.3 has been replaced with the updated map provided.

**TRANSPORTATION/FLOOD CONTROL  
DEPARTMENT**

825 East Third Street • San Bernardino, CA 92415-0835 • (714) 387 2800



**COUNTY OF SAN BERNARDINO  
ENVIRONMENTAL  
PUBLIC WORKS AGENCY**

KEN A. MILLER  
Director

December 19, 1989

File: 2-701/1.00

HQ Mac/Dev  
Building 1600  
Scott A.F.B., IL 62225

Attention: Ms. Patricia Calliott

Re: Zone 2, Santa Ana  
River Environmental  
Impact Statement for  
the Closure of  
Norton A.F.B.

Dear Ms. Calliott:

Reference is made to the Department of Air Force letter dated November 15, 1989, with accompanying Draft Environmental Impact Statement dated November 1989, requesting the District's review and comments.

4-1 [Norton Air Force Base has two major flood control facilities adjacent to the base. City Creek Channel along the base's northerly boundary and City Creek and Santa Ana River Levees along the Santa Ana River to the south. The City Creek Channel is a trapezoidal channel with earth bottom concrete sides and is owned and operated by North Air Force Base. The City Creek Levee is rock faced and was constructed by the U.S. Army Corps of Engineers, ending approximately 1.5 miles west on Alabama. Downstream and to the west the Santa Ana River Levee is faced with pile and wire and in a major storm could possibly overflow.]

Should you have any further questions concerning this matter, please feel free to contact Jay J. Johnson of this office, or me at (714) 387-2515.

Very truly yours,

KENNETH D. GOIDRY, Chief  
Water Resources Division

KDG:MGM:mjs  
cc: KAM/CLI Reading File

E-15

Response to 4-1:

Comment noted.

# City of Redlands



December 20, 1989

Ms. Patricia Calliott  
HQ MAC/DEV  
Building 1600  
Scott AFB, Illinois 62225-5001

Subject: Norton Air Force Base (AFB) Closure  
Environmental Impact Statement (EIS)

Dear Ms. Calliott:

The City of Redlands has reviewed the Environmental Impact Statement for closure of Norton Air Force Base and the following comments are made in reference to this document:

- 5-1 [ On pages 4-9 and 4-10 there is reference to potential reuse of the base as an airport. Two environmental impacts are raised as "conceivable". Should an airport be installed; (1) increased noise levels (p. 4-9) and (2) further incompatible development will continue or be expanded in scope (p. 4-10). The City of Redlands is currently impacted by noise levels exceeding the 65 CNEL and are very concerned with a potential land use which maintains and/or exceeds current noise levels and has similar or expanded land use implications. If this "potential" reuse is a "given" as a result of the North AFB closure, the impacts of noise and effect on land use should be examined within this document.
- 5-2 [ On page 4-25 there is a Figure 4.6 which shows potential road construction near Norton AFB. On the left side of the map there is a drawing showing proposed SR 30 extension. While the intent may be schematic to show Route 30 might be extended from its current terminus to Route 60, beyond its extension to Interstate 10 the map is inaccurate and deceptive. Major geographical and urbanized areas are in the path of the road alignment as shown. I am not aware of any alignments as presented which would even approximate the one shown. This option is not a viable mitigation measure.

Response to 5-1:

The impacts of noise and the effect on land use will be addressed in the second environmental impact statement (EIS).

Response to 5-2:

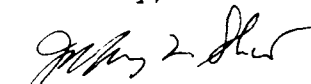
Figure 4.6 has been modified to delete the figure showing the possibility of a Route 30 extension.

Norton Air Force Base (AFB) Closure  
Environmental Impact Statement (EIS)  
December 20, 1989  
Page two

5-3 [The environmental document addresses the cleanup of toxic waste on site. The City of Redlands concurs with the issues raised and mitigation measure proposed. The potential impact of toxic materials upon water quality can not be underscored and therefor we make special note of this issue.

If you have any questions regarding our comments, please contact me.

Sincerely,



Jeffrey L. Shaw  
Community Development Director

JLS:cvd

Response to 5-3:

Comment noted.



## City of Fontana CALIFORNIA

December 21, 1989

Ms Patricia Calliott  
HQ MAC/DEV  
Bldg 1600  
Scott AFB, IL 62225-50001

Re: EIS for the Closure of Norton Air Force Base

Dear Ms Calliott:

6-1 [The City of Fontana has reviewed the Draft Environmental Impact Statement for the Closure (Withdrawal of Units) of Norton Air Force Base, California. The City has no comment at this time. However, we would appreciate receiving the second EIS covering the final disposition of the base property including potential reuse when that document becomes available.]

If you have any questions or need to contact us, please call me at (714) 350-6602.

Sincerely,

Lisa Donnell, Senior Planner

C/Lisa/Pat Calliott 12/21/89/yv

Response to 6-1:

No response required.



DEPARTMENT OF HEALTH &amp; HUMAN SERVICES

Public Health Service

Centers for Disease Control  
Atlanta GA 30333

January 2, 1990

Ms. Patricia Calliott  
HQ MAC/DEV  
Bldg 1600  
Scott AFB, Illinois 62225-5001

Dear Ms. Calliott:

We have completed our review of the Draft Environmental Impact Statement (DEIS) for the Closure (Withdrawal of Units) of Norton Air Force Base, California. We are responding on behalf of the U.S. Public Health Service.

- 7-1 [ Our review of the information provided did not reveal significant adverse public health impacts due to the planned withdrawal of units from this Base. Potential impacts, including management and cleanup of potential hazardous materials onsite have been adequately addressed. We agree that this activity should result in no appreciable negative cumulative impacts.
- 7-2 [ Because several types of activities in the past at Norton AFB have had the potential to contribute to soil and groundwater contamination, completion of the Installation Restoration Program must be ensured. We note that a formal Interagency Agreement between the Environmental Protection Agency, Air Force, and California Department of Health Services has been signed, and all applicable Federal and county regulations will be followed to minimize any potential negative impacts associated with the withdrawal of units.
- 7-3 [ We also note that because the arrival of units at the new locations are not part of the EIS, those impacts will be assessed in separate National Environmental Policy Act (NEPA) documents, and a second EIS will be prepared to cover the final disposition of the base property (including potential reuse). We agree that Air Force controls that have been previously recommended to prevent incompatible development should remain in effect until decisions on reuse have been made.

Thank you for the opportunity to review and comment on this DEIS. Please insure that we are included on your mailing list to receive a copy of the final document, and future DEIS's which may indicate potential public health impact and are developed under NEPA.

Sincerely yours,

Kenneth W. Holt, M.S.E.H.  
Environmental Health Scientist  
Center for Environmental Health  
and Injury Control

Response to 7-1:

Comment noted.

Response to 7-2:

The Air Force has committed to completing the restoration of contaminated sites at Norton AFB (see Sec. 4.1.1.1).

Response to 7-3:

Comment noted.

## DEPARTMENT OF TRANSPORTATION

DISTRICT 8 P.O. BOX 231  
SAN BERNARDINO, CA 92402  
TDD (714) 383-4609



January 2, 1990

08-SBd-30-24.2

Ms. Pat Calliott  
HQ MAC/DEV  
Building 1600  
Scott AFB, IL 62225-5001

Dear Ms. Calliott:

Response to the Draft Environmental Impact Report for the Closure  
of Norton Air Force Base.

We have reviewed the above mentioned project and request  
consideration of the following comments:

- 8-1 [ We concur with the mitigation in the transportation section on the  
Air Force setting up a commute program. The next document should  
list more specific demand mitigations the Air Force will take to  
reduce their share of congestion due to the relocation of this  
facility.
- 8-2 [ In addition, this document should examine the exit ramp to March  
Air Force Base (Cactus Avenue) and insure it is not affected by the  
increased number of trips. The Air Force should provide  
mitigations to insure that traffic does not back up on to  
Interstate 215.

If you have any questions, please contact Richard Malacoff at (714)  
383-4550.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Harvey J. Sawyer'.

HARVEY J. SAWYER  
Chief, Transportation Planning  
Branch B

Response to 8-1:

The Norton AFB reuse EIS will include a discussion of transportation mitigation, as will the March AFB realignment EIS.

Response to 8-2:

The March AFB realignments EIS will discuss mitigation of any projected traffic impacts in the vicinity of March AFB.



CITY OF  
**San Bernardino**

OFFICE OF THE CITY ADMINISTRATOR

January 5, 1990

Ms. Patricia Calliott  
HQ MAC/DEV  
Building #1600  
Scott AFB, Illinois 62225-5001

Dear Ms. Calliott:

The San Bernardino Mayor and Common Council at their meeting of January 3, 1990, directed that the following comments be forwarded to you regarding the Draft Environmental Impact Statement for closure of Norton Air Force Base California:

- 9-1 [ 1. It is recognized that issues of clean-up of hazardous waste are being deferred to the second (reuse) EIS (PV). However, the City continues to request specific action plans including time frames for removal of hazardous waste materials.
- 9-2 [ 2. Four archeological sites have been identified with a potential for 21 more sites, however, they have not been located on any map of the base. The additional 21 sites are listed for further study, but it would be helpful to know what has been found, what, if any, restrictions might be placed on the use of the area and the specific areas identified.
- 9-3 [ 3. The EIS did not include the General Plan proposed roadways the City has identified. Had they known

100 NORTH G STREET SAN BERNARDINO  
AL THIN A 92678 714 384 5122

Response to 9-1:

The IAG identifies Air Force plans and a copy has been furnished to the city of San Bernardino. When the time frame for removal of hazardous materials has been formally established among the signers of the IAG, a copy will be provided to the city of San Bernardino.

Response to 9-2:

Three of the four historical archaeological sites are refuse disposal sites; the fourth is a railroad bridge (Ross 1989). In addition, there are four historical archaeological sites all of which are irrigation ditches. Twenty-nine localities have been determined from historical maps as potential historic archaeological resources. Approximately one half of these localities are situated just north of the Timber water ditch; about one-third lie immediately within the base boundary. Precise locations of potential sites cannot be revealed in a public document.

None of the above-mentioned cultural resources will be affected by the base closure. However, subsequent Air Force-sponsored investigations will determine whether any sites are significant enough to be on the National Register of Historic Places.

The text in Sec. 3.4.1 has been modified.

Response to 9-3:

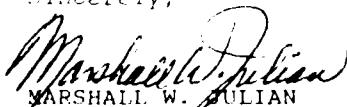
Comment noted.

Ms. Pat Calliott  
January 5, 1990  
Page 2

- [ of potential new roadways, some comments may have changed.
- 9-4 [ 4. In the Installation Restoration Program, what are the agreed upon deadlines for completion of the IRP?
- 9-5 [ 5. If the base groundwater supply has volatile organic compounds that exceed the MCL's, is the water being served to base personnel?
- 9-6 [ 6. In the Installation Restoration Program, what is considered early warning of significant changes? If an interim measure determines groundwater pumping to retard plume spread, is it the intent that the water will receive treatment to remove the contaminants?
- 9-7 [ 7. Hazardous waste removal from the Base is a serious transportation issue. Local (City and/or County) public safety officials must be aware and participate in planning the transporting of hazardous waste materials over City streets.
- 9-8 [ 8. It is recognized that the Air Force continues to indicate the Base Housing located north of 3rd Street will remain as Base housing. The City is concerned if the housing is released for sale. Because the area does not meet City standards, the potential for blight is significant.

I am also enclosing our comments of April 4th. As you are aware, we are very concerned that all issues be addressed as timely and fully as the closure occurs.

Sincerely,

  
MARSHALL W. JULIAN  
City Administrator

MWJ:JER:dm

Enclosure

Response to 9-4:

There are no specific deadlines for completing remedial measures because various treatments are being considered in the IRP process governed by the IAG. The deadlines will be added to the IAG as specific treatments are determined.

Response to 9-5:

Volatile organic compounds have been observed to exceed the maximum contaminant level (MCL) only once (1987) in one water supply well. The water is treated and mixed with water from other supply wells on base.

Response to 9-6:

See response to Comment 2-2.

Response to 9-7:

The Air Force will ensure that all hazardous waste is transported off base in a safe manner in accordance with all EPA, Department of Transportation (DOT), or state requirements. This is the policy that contractors now follow for routine disposal of generated waste. The Air Force will coordinate with city/county officials, when needed, based upon the traffic situation (route, time of day), type of waste, etc.

Response to 9-8:

The Air Force intends to retain the base housing.



C I Y O F

San Bernardino

REC'D.-ADMIN. OFF.

1989 DEC 28 PM 2: 41

PLANNING DEPARTMENT

Ms. Pat Calliott  
Headquarters Military Airlift Command/DEEV  
Scott Air Force Base, Illinois 62225

RE: Notice of Intent to Prepare Environmental Impact Statements for the  
Closure of Norton Air Force Base, California

Dear Mr. Calliott:

Thank you for giving the City of San Bernardino the opportunity to comment on potential environmental impacts that may occur as a result of the closure and final disposition of property at Norton Air Force Base, CA

Based on our understanding of the Notice of Intent, there may be a possibility that an Environmental Impact Study will not be prepared. We do not concur and believe that the proposed action will have significant effects on the human environment, sufficient to justify the preparation of a full Environmental Impact Statement. We also want to go on record supporting the preparation of one environmental document that complies with both NEPA and CEQA requirements per Section 1506.2 of NEPA.

The following list of potential environmental impacts should be fully analyzed in the EIS/EIR:

1. We believe there may be potential traffic impacts to the already congested highways. Closure of Norton Air Force Base will most certainly necessitate retirees that rely on the commissary, BX, clinics and hospitals to commute. This commute will, in turn, have impacts on air quality in the smoggiest region in the State.

There may also be traffic impacts associated with the reuse. Various potential alternatives may generate significant trips. How will the reuse of the base affect infrastructure improvements?

When calculating these impacts, we will need to know what are the assumptions used in estimating total trips generated as a result of the closing? Of the reuse? And what are their related vehicular emissions? To relieve any significant air quality and traffic impacts, the EIS/EIR should include transportation system and demand management programs, as methods of encouraging the use of mass transit, ride sharing, trip reduction and similar strategies.

San Bernardino County Office of Planning  
 J. Pat Calliott  
 April 4, 1989  
 Page 2

TEL NO: 714-384-5461

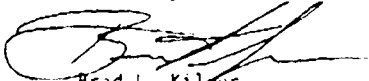
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2. What is the anticipated employment level associated with the reuse and how does it relate to the most recent SCAG growth forecast for RSA 29? What are the cumulative impacts and growth caused by this project and other projects in the RSA, and how are they related to SCAG-82 Modified for the anticipated dates of completion or phasing of the project? What are the impacts on local employment? This analysis should include an analysis of employment as well as the civilian and military personnel directly employed on base. What are the interrelated social and economic impacts of the closure? Of the reuse?
3. What are the potential land use impacts associated with the reuse of the base? Of particular interest are noise impacts if the base is reused for commercial aircraft. What are the potential impacts associated with reuse of the existing facilities. How will ownership transfers occur and what will the associated costs be?
4. What are the impacts on the local environment? To what extent is the local ground water and soil contaminated? Environmental contamination may hinder the ability to convert the base to civilian use. Who will pay for the clean-up and what are the time-frames forecast for clean-up? If conversion is hindered due to clean-up operations, how will the local economic situation be affected? It should be noted that the City opposes the closure of Norton Air Force Base prior to full clean-up of the contaminated soil and ground water.

Section 1501.2 of NEPA requires "agencies to integrate the NEPA process with other planning at the earliest possible time to insure that planning and decision reflect environmental values, to avoid delays later in the process and to head off potential conflicts. To accomplish this, agencies shall identify environmental effects in adequate detail so they can be compared to economic and technical analysis, as well as study, develop and describe appropriate alternatives." The City of San Bernardino Strongly supports this concept and will look forward to reviewing the Draft EIS/EIR.

If you should have any questions regarding these comments, please feel free to contact me at (714) 384-5057.

Sincerely,



Brad L. Kilger  
 Director of Planning

BLK:clp

cc: Evelyn Wilcox, Mayor

Jim Robbins, Acting City Administrator

George E. Brown, Jr.  
 2188 Rayburn House Office Building  
 Washington, D.C. 20515

CA 001101&P2

**DEPARTMENT OF TRANSPORTATION****DIVISION OF AERONAUTICS**

1130 K STREET - 4th FLOOR  
MAIL P.O. BOX 942873  
SACRAMENTO, CA 94273-0001  
(916) 322-3090  
TDD (916) 323-7665



January 2, 1990

Ms. Patricia Calliott  
HQ MAC/DEV  
Building 1600  
Scott AFB, IL 62225-5001

Dear Ms. Calliott:

DEIS for the Closure  
(Withdrawal of Units) of Norton Air Force Base, California

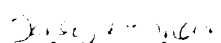
The California Department of Transportation, Division of Aeronautics, has reviewed the above-referenced document with respect to the Division's area of expertise as required by CEQA. The following comments are offered for your consideration.

- 10-1 [As we understand it, this EIS addresses the environmental impacts associated with the departure of units currently located on the base. A second EIS will address the final disposition or potential reuse of the base. Because the reuse of the base as an airport is possible, we concur with the statement on page 4-10 of this EIS, that "any controls that have been implemented to prevent incompatible development should remain in effect until decisions on reuse have been made."

Thank you for the opportunity to review and comment on this proposal. We also would like to be involved in the early consultation process for the 2nd EIS concerning potential reuse of the base.

Sincerely,

JACK D. KEMMERLY, Chief  
Division of Aeronautics

  
Sandy Mesnard  
Environmental Planner

cc: San Bernardino County ALUC

E-33

Response to 10-1:

Comment noted.



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

**JAN 05 1990**

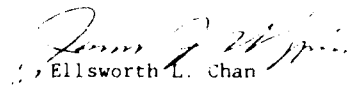
Ms. Patricia Calliott  
Headquarters MAC/DEV  
Building 1600  
Scott A.F.B., Illinois 62225-5001

Dear Ms. Calliott:

The November 1989 Draft Environmental Impact Statement (DEIS) for the closure of Norton Air Force Base (AFB), California was reviewed by various Divisions of the Federal Aviation Administration (FAA) Western Pacific Region. We have no specific comments on the DEIS content.

11-1 [ We are however, concerned about facilities jointly supported by the Air Force and FAA. The planned base closure should insure an orderly transition of AFB support responsibilities, which precludes negative impact to these joint-use facilities, as well as protect existing FAA facilities located on and/or adjacent to Norton AFB. Of specific concern, is continuing availability easements restricting growth of vegetation and construction that could affect or derogate facility performance, removal of FAA equipment that may be decommissioned as a result of base closure, and property rights to the real estate on which FAA facilities are located. The necessary lands, easement, etc., should be transferred to the FAA at no cost.

We appreciate your timely coordination of the DEIS.

  
Ellsworth L. Chan  
Manager, Safety and Standards Branch

AD-A227 699

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CLOSURE  
(WITHDRAWAL OF UNITS... (U) MILITARY AIRLIFT COMMAND  
SCOTT AFB IL JUL 90 MAC-FEIS-900311 XF-MAC

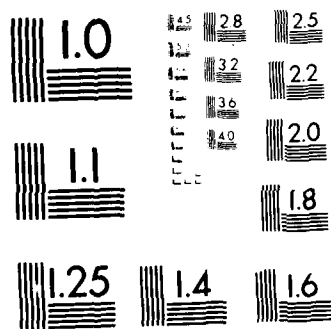
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MICROCOPY RESOLUTION TEST CHART  
 NATIONAL BUREAU OF STANDARDS  
 STANDARD REFERENCE MATERIAL 1010a  
 (ANSI and ISO TEST CHART No. 2)

Response to 11-1:

These issues are currently being considered by Headquarters Air Force and Federal Aviation Administration (FAA) Headquarters as part of the disposal/reuse planning. Any environmental effects that may occur as a result of these decisions will be discussed in the reuse/disposal EIS.

[Page intentionally left blank]



GEORGE DEUKMEJIAN  
GOVERNOR

*State of California*  
GOVERNOR'S OFFICE  
OFFICE OF PLANNING AND RESEARCH  
1400 TENTH STREET  
SACRAMENTO 95814

(916) 323-7480

DATE: January 5, 1990

TO: U. S. Department of the Air Force  
HQ MAC/DEV  
ATTN: Ms. Patricia Calliott  
Building 1600  
Scott AFB, IL 62225-5001

FROM: Office of Planning and Research  
State Clearinghouse

RE: Draft Environmental Impact Statement for the Closure (Withdrawal  
of Units) of Norton Air Force Base, Riverside and San Bernardino  
Counties (SCH 89022401)

As the designated California Single Point of Contact, pursuant to Executive Order 12372, the Office of Planning and Research transmits attached comments as the State Process Recommendation.

This recommendation is a consensus; no opposing comments have been received. Initiation of the "accommodate or explain" response by your agency is, therefore, in effect.

Sincerely,

A handwritten signature in black ink, appearing to read "R. P. Martinez".

Robert P. Martinez  
Director

Attachment

cc: Applicant

Resources Building  
1416 Ninth Street  
95814  
(916) 445-5656  
TDD (916) 324-0804

California Conservation Corps  
Department of Boating and Waterways  
Department of Conservation  
Department of Fish and Game  
Department of Forestry  
Department of Parks and Recreation  
Department of Water Resources

GEORGE DEUKMEJIAN  
GOVERNOR OF  
CALIFORNIA



THE RESOURCES AGENCY OF CALIFORNIA  
SACRAMENTO, CALIFORNIA

Air Resources Board  
California Coastal Commission  
California Tahoe Conservancy  
California Waste Management  
Board  
Colorado River Board  
Energy Resources Conservation  
and Development Commission  
San Francisco Bay Conservation  
and Development Commission  
State Coastal Conservancy  
State Lands Division  
State Reclamation Board  
State Water Resources Control  
Board  
Regional Water Quality  
Control Boards

U. S. Department of the Air Force  
HQ MAC/DEV  
ATTN: Ms. Patricia Calliott  
Building 1600  
Scott AFB, IL 62225-5001

January 5, 1990

Dear Ms. Calliott:

12-1 The State has reviewed the Draft Environmental Impact Statement for the Closure (Withdrawal of Units) of Norton Air Force Base, Riverside and San Bernardino Counties, submitted through the Office of Planning and Research.

We coordinated review of this document with the Santa Ana Regional Water Quality Control Board, the Air Resources Board, and the Departments of Fish and Game, Health Services, Parks and Recreation, and Transportation.

The Department of Transportation commented directly in correspondence dated January 2, 1990.

Thank you for providing an opportunity to review this project.

Sincerely,

*Nadella Jayar*

for Gordon F. Snow, Ph.D  
Assistant Secretary for Resources

cc: Office of Planning and Research  
1400 Tenth Street  
Sacramento, CA 95814  
(SCH 89022401)

Response to 12-1:

No response required.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 REGION IX  
 215 Fremont Street  
 San Francisco, CA 94105

98 JAN 1997

Ms. Patricia Calliott  
 HQ Military Airlift Command  
 DCS/Engineering and Services  
 Scott AFB, IL 62225-5001

Dear Ms. Calliott:

The Environmental Protection Agency (EPA) has received the Draft Environmental Impact Statement (DEIS) for the project entitled **Closure (Withdrawal of Units) of Norton Air Force Base, CA**. Our National Environmental Policy Act (NEPA) review is pursuant to the Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508) and Section 309 of the Clean Air Act.

The proposed closure is part of the recommendation package prepared by the Defense Secretary's Commission on Base Realignments and Closures. The action described in this DEIS consists of the withdrawal of units from Norton Air Force Base (Norton AFB) and their relocation primarily to March AFB (20 miles away). The relocation includes transfers of personnel, aircraft, and various other equipment and material. Impacts of the relocation on March AFB and of future disposal and reuse of Norton AFB will be analyzed in separate NEPA documents.

- 13-1 [ EPA concerns are impacts to hazardous waste cleanups, hazardous waste management, air quality, and long-term protection of valuable natural resources and habitats at Norton AFB. Base upon our review, we have classified this DEIS as category EC-2, Environmental Concerns - Insufficient Information (see attached "Summary of the EPA Rating System"). To avoid conflicts between moving contractors and hazardous waste cleanup actions, we recommend close coordination between environmental staff and those responsible for relocation activities. Our detailed comments are enclosed.
- 13-2 [ We encourage the Air Force to consider withdrawal and maintenance alternatives which will maximize and preserve the long-range environmental benefits of their holdings. For instance, the Air Force should consider the transfer of sensitive and especially valuable habitat and natural resources to resource agencies (e.g. Fish and Wildlife Service, National Park Service) in order to provide for their management and protection. If this cannot be accomplished, EPA recommends that preservation of

Response to 13-1:

The environmental coordinator will continue to work closely with base-closure representatives to avoid conflicts between moving contractors and hazardous waste cleanup activities.

Response to 13-2:

These concerns will be discussed in the Norton AFB reuse EIS.

existing wetland and riparian resources and other valuable habitat be stipulated as a condition of transfer to the private sector, if legally feasible. We encourage the Air Force to include alternatives in the disposal and reuse EIS which will continue to preserve resources. Furthermore, we recommend that any post-closure changes in zoning and land use be made after specific reuse options have been decided through the NEPA process.

13-3

EPA believes it is very important to include Federal and State environmental and resource agencies in the base reuse planning process. Given the complex hazardous waste cleanups it is important that the local communities clearly understand potential environmental constraints on base reuse options caused by hazardous waste sites and cleanup actions.

We appreciate the opportunity to comment on the proposed project and request that four copies of the Final Environmental Impact Statement (FEIS) be sent to this office at the same time it is filed with our Washington, D.C. office. We also request notification of any meetings(s) to be held regarding this project. If you have any questions, please contact Ms. Laura Fujii (415) 744-1051, (FTS 484-1051).

Sincerely,



Deanna Wieman, Director  
Office of External Affairs

Enclosures: 3 pages

EPA ID# 90-066

cc: AFRCE, San Francisco, Phil Lammi  
Norton AFB, Base Commander  
USFWS, Laguna Niguel  
USNPS, San Francisco  
CA Dept. of Fish & Game, Region 5  
HQ EPA/OFA, Sandy Williams  
EPA Regions 6 & 10  
Office of Econ. Adjustment, Ken Matzkin  
South Coast AQMD  
DOHS, Angelo Bellomo  
San Bernardino County, Robert Hammock  
Mayor, City of San Bernardino, Evelyn Wilcox  
San Bernardino County, Land Management Dept.  
Southern California Assoc. of Gov., Mark Pisano

Response to 13-3:

A Technical Review Committee (TRC), composed of Air Force, federal, state, and local government representatives has been established as required by the IAG. The TRC will address IRP activities to keep all affected parties informed of environmental constraints on base reuse options caused by hazardous waste sites and cleanup actions.

EPA COMMENTS, AIR FORCE, DEIS CLOSURE (WITHDRAWAL OF UNITS) OF NORTON AFB, SAN  
BERNARDINO CO., CA., DEC 1989

#### HAZARDOUS WASTE COMMENTS

##### **Hazardous Waste Cleanup**

1. EPA is concerned with the impact of the proposed action on the pace and quality of cleanup programs. The FEIS should address in detail impacts to the following.
- 13-4 -- Base environmental staffing. Hazardous waste cleanups are often very complex, labor intensive, lengthy and costly. It is very important to have a full staff of highly qualified experienced personnel on-site in order to ensure timely and effective cleanup. We encourage the Air Force to commit to continuing on-site base environmental staffing as long as necessary to accomplish required cleanup actions.
  - 13-5 -- Funding for investigation and cleanup needs. EPA is concerned that base closure may reduce the installation's ability to effectively lobby for cleanup funds at the Washington, D.C. level. It is clear that many installations will be vying for an ever-diminishing pot of cleanup funds. The loss of "mission-related" activities, a change in the mission, and loss or reassignment of ranking officers may affect the base's ability to obtain funds. The FEIS should address this issue and describe avenues available to base environmental staff to obtain the necessary funding for continuing long-term cleanup activities.
  - 13-6 -- Cleanup schedules. Closure should not affect the cleanup schedule established in the Interagency Agreement (IAG). The FEIS should discuss in detail how the Air Force plans to accommodate concurrent cleanup and closure actions and avoid traffic and administrative delays and conflicts. Access by Air Force environmental staff and/or their hazardous waste contractors conducting cleanup and investigation activities must be assured.
  - 13-7 2. The FEIS should explicitly address whether or not the removal of any Installation Restoration Program (IRP) hazardous waste or materials contaminated with hazardous substances identified under the IRP is planned as part of this phase of the closure activities.
  - 13-8 3. The DEIS acknowledges the possible change in groundwater flow patterns associated with reduced groundwater withdrawal due to the proposed action (p. 4-10). Changes in groundwater rates could adversely affect the movement of the plume of contamination. The FEIS should identify the measures that will be taken

Response to 13-4:

In accordance with terms of the IAG under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sec. 120, the U.S. Air Force is committed to the cleanup of hazardous waste sites at Norton AFB, which will include providing adequate staff and other resources necessary to conduct the cleanup work. The IRP under which this cleanup is being conducted is independent of the closure of Norton AFB and will continue after the withdrawal of units.

Response to 13-5:

For the cleanup of Norton AFB, the IAG (see the response to Comment 13-4) commits the U.S. Air Force to conducting the cleanup activities; funds will be pursued in accordance with this commitment. Furthermore, the IRP is independent of closure and should not be adversely affected by a reduction in mission-related activity. Funding for cleanup activities is available on a "worst-case-first" basis. This is done to ensure that the most serious threats to the public receive the necessary attention. Norton AFB will receive the same consideration for funding as an active installation, based upon a "worst-case-first" analysis. The Air Force will clean up buildings, grounds, and any contaminated sites that constitute a health hazard in compliance with federal and state regulations. It is fully expected that funding will be provided.

Response to 13-6:

Closure and cleanup actions are independent activities and will be closely coordinated to minimize interferences. The locations of the waste cleanup sites and the general locations of the closure activities present little potential for significant interferences. The Air Force does not expect that the established cleanup schedule will be affected by the closure.

Response to 13-7:

Removal of IRP hazardous waste and materials contaminated with hazardous substances identified under the IRP is not a part of the closure. The Air Force is committed to this effort independent of the base closure (see Sec. 4.1.1.1).

Response to 13-8:

See the responses to Comments 2-1 and 2-2.

EPA COMMENTS, AIR FORCE, DEIS CLOSURE (WITHDRAWAL OF UNITS) OF NORTON AFB, SAN  
BERNARDINO CO., CA., DEC 1989

should the base closure and associated changes in groundwater withdrawal rates produce changes in the movement of the contaminated plume.

- 13-9 [ 4. The FEIS should address the potential for increased risk of exposure to hazardous substances caused by the proposed closure action and associated potential for reduced security at hazardous waste/substances sites. Measures to be taken to mitigate for this potential increased risk should be discussed in the FEIS.

#### **Hazardous Waste Management**

- 13-10 [ 1. As with hazardous waste cleanup, EPA is concerned with the impact of the proposed action on the effectiveness and quality of hazardous waste management programs. The FEIS should discuss impacts to base environmental staffing, funding, and compliance schedules. Withdrawal actions should not affect the proper management of hazardous waste or the timely compliance with past and current violations.
- 13-11 [ 2. The FEIS should address in more detail (e.g. closure schedules and methods) the closure plans and impacts to the Industrial Waste Treatment Plant (IWTP) and associated treatment/storage ponds, aircraft wash racks, oil/water separators, hazardous waste storage areas, and 77 active underground storage tanks (USTs, p. 3-12).

#### **AIR QUALITY COMMENTS**

- 13-12 [ 1. The FEIS should address air quality impacts from an air basin perspective. Both Norton AFB and March AFB are located in the South Coast Air Basin (Basin) which has the worst air quality in the country. Although the proposed action may have beneficial impacts on local Norton AFB air quality, the action does not appear to decrease or remove air pollutant sources from the South Coast Air Basin.
- 13-13 [ 2. The FEIS should describe the status of current and pending air pollution permits and credits (p. 3-18). Describe what will be done with these permits and credits upon transfer or closure of their emission sources.
- 13-14 [ 3. The DEIS describes potential measures such as car/van pooling, and flexible work hours to mitigate for withdrawal-related transportation and air quality impacts (p.4-24). We support the

Response to 13-9:

Any increase in risk due to changes in institutional control will be considered in the RI/FS or Resource Conservation and Recovery Act (RCRA) closure plan(s). Increased risk due to removal of closure actions will be evaluated in selecting remedial actions.

Response to 13-10:

See the response to Comments 13-3, 13-4, and 13-5.

Response to 13-11:

Permits for facilities to be used by the Ballistic Missile Organization (BMO), formerly the Ballistic Systems Division (BSD), will be retained, and permits for facilities that are not anticipated to be used after base closure will be terminated.

Specific closure plans and schedules have not yet been developed for various facilities, such as the industrial waste treatment plant, separators, etc., except for the Aerospace Audiovisual Service (AAVS) holding pond. A scope of work has been developed for this facility. Funds have been made available to accomplish the closure plan.

Appropriate closure actions for all facilities requiring such actions under RCRA or applicable state standards will be taken to ensure that these facilities do not create an environmental hazard when closed.

Response to 13-12:

Section 4.1.2.1 has been modified to address air quality impacts from a basin perspective.

Response to 13-13:

Norton AFB does not hold any emission-reduction credits at present. This statement has been added to the text in Section 3.2.2.2.

Response to 13-14:

A strategy for implementing mitigation for withdrawal-related transportation has not yet been developed. It should be noted that changes in the action have reduced the number of military and civilian employee authorizations that will transfer from Norton AFB to March AFB from 3,497 to 1,062 (see Table 2.3).

EPA COMMENTS, AIR FORCE, DEIS CLOSURE (WITHDRAWAL OF UNITS) OF NORTON AFB, SAN  
BERNARDINO CO., CA., DEC 1989

Air Force and encourage the Air Force to commit to these mitigation measures and to describe in the FEIS a strategy for institutionalizing these measures.

GENERAL COMMENTS

- 13-15 1. The DEIS mentions the presence of man-made ponds and the Santa Ana River's 100-year floodplain (p. 3-27). The FEIS should describe whether these areas have wetland and riparian habitat. (In the reuse EIS, explain whether change in use would likely require flood protection and if so, probable effects upon wetland and riparian habitat.) Indicate whether these areas must be maintained to ensure their continued existence (e.g. whether the man-made ponds require pumped water to maintain depth, habitat, etc.). EPA recommends the continued preservation and maintenance of natural resources which will maximize the environmental and ecological benefits of Norton AFB.

Response to 13-15:

The closing of Norton AFB will not affect wetlands or floodplains.

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**APPENDIX F**

**PUBLIC HEARING TRANSCRIPTS**

**Part I: PUBLIC HEARING AT NORTON AIR FORCE BASE, DECEMBER 13, 1989 ..F-5**

**Part II: PUBLIC HEARING AT SAN BERNARDINO, DECEMBER 13, 1989 .....F-17**

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**APPENDIX F:**  
**PUBLIC HEARING TRANSCRIPTS**

Two public hearings were held in response to the draft environmental impact statement (DEIS) for the closure of Norton Air Force Base, California. The first public hearing was held at Norton Air Force Base, December 13, 1989, at 9:00 a.m.; the second was held at the Council Chambers in City Hall, San Bernardino, December 13, 1989, at 7:00 p.m. The proceedings of the hearings were recorded by Dorothy Babykin. Transcripts were provided on computer diskette by Ludwig Court Reporters, Inc., of Toluca Lake, California.

**Appearances:**

Colonel Michael B. McShane (Hearing Officer)  
USAF Judiciary  
Fifth Circuit

Major Joseph G. Kaiser  
Operational Programming Officer  
Military Airlift Command

Ms. Patricia M. Calliott  
Environmental Protection Specialist  
Military Airlift Command

Dr. Gary J. Marmer  
Environmental Assessment and Information Sciences Division  
Argonne National Laboratory

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**APPENDIX F: PART I**

**Public Hearing Transcript: Norton Air Force Base, December 13, 1989**

Colonel McShane: Good morning, ladies and gentlemen.

My name is Mike McShane, and I'm a full-time military trial judge for Air Force courts-martial. I have been designated by the Office of the Judge Advocate General in Washington as presiding officer for today's public hearing upon the draft environmental impact statement.

This public hearing is being held in accordance with the National Environmental Policy Act, implementing regulations for the Act, and the Base Closure and Realignment Act, Public Law 100-526.

The Air Force has prepared and distributed in accordance with applicable regulations a draft environmental impact statement addressing the impacts of withdrawing troops and equipment from Norton Air Force Base.

This draft environmental impact statement does not address final disposition or reuse of the base. I am not here as an expert on this proposal, nor have I had any connection with its development. I am not here to act as a legal advisor to the experts who will address this proposal. My purpose is simply to ensure that we have a fair, orderly hearing, and that all who wish to be heard have a fair chance to speak.

Let me take just a moment to explain how today's hearing will proceed. This isn't going to be a debate nor a referendum or vote upon the action itself. What this informal hearing is intended to provide is a public forum for two-way communication about the environmental impacts of withdrawing troops and equipment from Norton Air Force Base.

The first part of this hearing calls for you to listen carefully to what the experts say as you are briefed on the anticipated environmental consequences. After the briefing, you'll be able to ask questions to clarify any points made in the briefing or in the draft environmental impact statement itself.

The second part of the hearing is for you to tell the Air Force what you think, to give the Air Force the benefit of your knowledge of the local area affected by the action and any environmental hazards you perceive.

As you came in, you should have been asked to sign in and asked if you wanted to make a statement during this hearing. After the speakers are done and the clarifying questions have been asked, we will take a short break. I will collect the cards of those who want to speak, and when we get back from the break, I will recognize members of the public for the purpose of making comments about the action.

Don't be shy or hesitant about making a statement. This is an informal hearing and your comments are important. I want to help ensure that all who wish to speak have a fair chance to be heard. So please help me enforce the following ground rules:

First, only speak after I recognize you, and please address your remarks to me.

Second, speak clearly and slowly, starting out with your full name, address and the capacity in which you appear; that is, as a public official, a designated representative of a private association or a person speaking solely in his or her individual capacity so our court reporter, Mrs. Babykin, who has to make a verbatim record of these proceedings, can do her job professionally.

Third, statements will be limited to five minutes for individuals. Public officials and designated spokespersons of private groups will be allowed up to ten minutes. If there is time remaining after everyone has had an opportunity to speak, I can recall anyone who wishes to make additional comments.

Fourth, honor any requests from me that you cease speaking.

Fifth, please do not speak while another person is speaking. Only one person will be recognized at a time.

And, finally, there will be no smoking during the hearing, and I would appreciate your cooperation with that rule.

If we run out of time before everyone gets to speak, you are invited to fill out a comment sheet. These are located at the back of the room, and there are plenty of them there.

You will note that statements can be submitted at any time prior to 8 January 1990, by mailing them to Pat Calliott at the address on the comment sheet.

Regardless of whether you put your statement in the record today or mail it in later, it will be carefully considered and made part of the record of these proceedings. It will have equal weight and receive the same careful consideration whether made during today's hearing or afterward.

I would like to thank everyone who turned out for this meeting. Your presence here is commendable in that it reflects a great interest in your community and in those things that are important to it. Let me assure you that your interest is the primary reason for us being here.

Now, it's my pleasure to introduce Major Joe Kaiser, the Operational Programming Officer for Military Airlift Command, who will brief the closure and realignment actions.

Major Kaiser.

Major Kaiser: Thank you, sir.

Good, morning, I am Major Joe Kaiser, as he has stated, from the Operational Programs Division, which is under the directorate of plans and programs of the Military Airlift Command at Scott Air Force Base.

I'm going to talk to you today about the closure and realignment actions recommended by the Defense Secretary's Commission on Base Realignment and Closure.

First, I'll talk about the rationale for selecting Norton as a closure candidate.

Next, I'll discuss the commission's criteria for the relocation of activities at Norton. Then, I will highlight the recommendations of the commission as well as those of the Air Force.

Finally, I will outline and summarize the moves that will take place to relocate units from Norton in order to achieve base closure.

In December of 1988, the Base Closure Commission recommended Norton Air Force Base as a closure candidate. And in January of 1989, the Secretary of Defense approved the commission's recommendations.

The commission's report stated that the military value of Norton is lower than other strategic airlift installations because of a combination of increasing air traffic congestion, outdated facilities, and an increasing cost of operations.

With the closing of Norton, we will consolidate some of the C-141 activities or operations. Twelve of the current 48 aircraft here at Norton, the C-141s, and associated personnel authorizations will relocate to McChord Air Force Base in Washington, which is already a C-141 base.

Another factor was the known operating deficiencies at Norton. These deficiencies result in a high cost of operation and maintenance. Because of the less-than-optimum conditions of these facilities, there is a higher than normal expenditure for required maintenance, repair, and periodic replacement. There is also a shortage of weapon storage facilities here at Norton. Utilities and most other facilities need a general upgrading as well.

In the area of quality of life, the deficiencies stated were that Norton has a prominent shortage of family housing units as well as inadequate medical, dental, and recreational facilities.

Due to the ever growing population in this area, there is also an associated increase in air traffic congestion. This is not conducive to the training and mission requirements of a military airlift wing.

These were the primary reasons behind the selection of Norton Air Force Base for closure. These are not necessarily presented here today for discussion or comment, but, rather, they are presented as background information leading up to the need of the environmental assessment.

After the commission determined which bases they were going to study for closure, they now had to determine where the affected units could be relocated. The bases to receive these units had to have the capacity to receive the activity or the unit, or that capacity could be created by another simultaneous move dealing with large organizations on that particular base.

The mission enhancement factors that they used for these gaining bases are listed here. The new base did not have to fulfill all of these factors, but, at least, the majority of them.

While the functions here at Norton are not considered a split function or operation, with the move of 12 C-141 aircraft to McChord, we will be consolidating some C-141 activities.

Any realignment would have to improve the training, mobilization, and command and control of activities being moved. Moving out of an already congested air traffic area around Norton and decreasing the number of military aircraft in this area should enhance the training that remains here.

With the high cost of deteriorating facilities here at Norton, operation costs will be decreased with the building of newer, more efficient facilities at March and the other locations noted. While we are not necessarily improving the airlift service to other DOD and other military and government functions, we will maintain the capability to provide service to these units in the West.

In the relocation to March, we hope to take this opportunity to improve facilities and, perhaps, enhance the way we're able to provide a service and do business.

With the new medical and dental facilities slated for March, we hope to see an improvement in the quality of life for our Air Force people. The relocation to March and other bases with excess capacity fits the established criteria for the closure commission.

The commission's recommendations then for relocation are the following:

The 63d Military Airlift Wing -- 36 of the current 48 aircraft which are stationed here would relocate to March. The 63d is the parent wing or host wing here at Norton. They would relocate to March and become a tenant.

The 445th Military Airlift Wing would also move to March. This is an associate reserve wing at Norton that will also transfer. They are tied together by their flying mission. Two of three squadrons would go with the wing when it transfers.

The 1400th Military Airlift Squadron, which has 4 C-12s and 4 C-21s, would also relocate to March as well as the Air Force Audit Agency.

Twelve of the current 48 aircraft here at Norton -- of the 141s, as well as the associated personnel authorizations, will transfer to McChord Air Force Base in Washington.

The Aerospace Audiovisual Service, or AAVS, is currently programmed to remain here at Norton. In the public scoping meeting in March of this year, it was stated that AAVS would move to March. Due to budgetary constraints, the current decision is to leave them here at Norton and isolate them in their current location. The commission's report allows us to do either a March move or keep them here at Norton.

The Ballistic Systems Division and those particular tenants which support BSD will remain here at Norton. They will be isolated in the containment area. This is the stated position of the Base Closure Law and the commission's report.

The Air Force Inspection and Safety Center would relocate to Kirtland Air Force Base in New Mexico. This action will consolidate functions with the Nuclear Surety Division, which is already located at Kirtland.

Additional Air Force recommendations for relocation for the Air Force Logistics Command Detachments:

Currently, there are three detachments located here at Norton. One detachment will remain at Norton to support the Ballistics Systems Division, BSD. The other two detachments will relocate to McClellan Air Force Base in California.

The 1380th School Squadron, which is the Military Airlift Command's Noncommissioned Officer Academy in the West, will relocate to Travis. Also, not listed here, the 22d Air Force Noncommissioned Officer's Leadership School will also transfer to McChord Air Force Base in Washington.

This map gives you a picture of the move actions which will take place for the closure of Norton Air Force Base.

This is another listing of how the units and activities will be divided and relocated.

Finally, this diagram shows the migration of the number of personnel authorizations involved in this closure action. It is broken down by military, civilian, and Air Force Reserve drill personnel. If you're not familiar with drill personnel, they are those people who come in and serve on weekends and during the summer. They're part-time. They're not full-time military.

These numbers also include those people who will be remaining at Norton in conjunction with the Aerospace Audiovisual Service and the Ballistics Systems Division.

This concludes my portion of the presentation this morning. I'd now like to introduce to you Ms. Pat Calliott from Headquarters Military Airlift Command.

Ms. Calliott: Good morning, ladies and gentlemen.

This morning I'd like to give you a brief rundown on the Air Force's environmental analysis process as it relates to this closure of Norton.

For those of you who were at the scoping meetings back in March, we told you at that time that the Air Force was going to be preparing two environmental impact statements (EISs) on the closure of Norton.

The very first document, the one we are here to receive comments on today, is the one on the withdrawal of the units from the base itself.

The second document will discuss the disposal of the land and the subsequent reuse of the base. The scoping period ended for the first document in April of this year. Now, as Colonel McShane mentioned to you, we're here to receive the comments on the first document today. You may comment either verbally or by writing on the comment sheets at the door. Those comments are due on the 8th of January 1990.

To give you some example of what you would expect to find in each of the environmental impact statements, this first document will discuss the socioeconomic effects, only to the extent that there are biophysical interrelationships.

The second document will discuss the balance of the socioeconomic effects.

In this first document, we talk about the impacts from transportation and hazardous materials. And in the second EIS, we talk about a cleanup of the hazardous waste sites on the base itself.

Now, there is no schedule for that second environmental impact statement because, as you all know, I'm sure, the alternatives for reuse are still being discussed.

There was one other issue that was brought up during the scoping meetings, and that was the application of CEQA, the California Environmental Quality Act. And Air Force Headquarters has determined that it's appropriate that the second environmental impact statement be done in accordance with CEQA.

This slide discusses some of the differences in the environment impact statement.

The EIS, of course, complies with the National Environmental Policy Act, or NEPA. And there were some changes that were required due to the base closure and realignment act. They're identified here. These include that we will not discuss the need, purpose, or reasons for the withdrawal. We will not consider alternative locations for the withdrawn units. And, of course, the decision on closure itself has already been made, and that is not discussed in the EIS.

The final slide, please.

This schedule is also in your handouts. It identifies the important schedule dates. And, of course, where we are now is in the public comment period. And to restate, it is important that we receive your comments by the 8th of January.

Okay. I'd like to introduce Dr. Gary Marmer from Argonne National Laboratory. They are the experts who actually prepared the Environmental Impact Statement for us, and he's going to tell you a little about the lab and give you a rundown on those impacts.

Dr. Marmer: Good morning.

The draft EIS was prepared by the staff of the Environmental Assessment and Information Sciences Division of Argonne National Laboratory for the Military Airlift Command.

Argonne is a government-owned, contractor-operated laboratory near Chicago, Illinois. We have been preparing environmental impact statements since 1972, initially for the Atomic Energy Commission, and subsequently, for other federal agencies.

Our staff consists of professionals in all the relevant disciplines from groundwater hydrology to socioeconomics.

Argonne's staff visited the base this past March and participated in the scoping meetings. Data used in the analysis were obtained from base personnel and federal, state, and local offices. Comments provided during the scoping that were relevant to the closure of the Norton Air Force Base were taken into account in preparation of the EIS.

The draft EIS under consideration addresses impacts expected to result from the closure of Norton Air Force Base and the realignment of units and associated equipment to other bases, principally, March Air Force Base. Impacts from the reuse of the facilities are not considered in this document.

As a result of the scope of the EIS, there are positive as well as adverse impacts expected to occur. The major adverse impact projected is a slight increase in traffic congestion on area highways and intersections in an already congested region. These transportation impacts result primarily from people commuting from Norton Air Force Base to March.

The major positive impacts resulting from the withdrawal of units from Norton Air Force Base are:

- A reduction in emissions of air pollutants from the base and its vicinity;
- A reduction of groundwater consumption by the base, thus increasing the groundwater availability for other users;
- Elimination of noise associated with aircraft landings, departures, and ground activities; and, finally,
- A reduction in the generation of hazardous wastes at the base, lessening the potential for spills and contamination related to the generation of storage and handling.

Thank you.

Colonel McShane: Thank you Major Kaiser, Ms. Calliott, and Dr. Marmer.

Does anyone have any questions to clarify the comments of the speakers this morning?

Sir?

Mr. Ayala: You mentioned, Pat Calliott, that the second EIS is still pending. Do you have any idea of when that will come to fruition, or do you have a timetable on that?

Ms. Calliott: We really have no schedule for that at this time. Since we're still in the "alternatives" development stage, it's very difficult -- I would anticipate perhaps next summer as a start date, but that's very iffy.

Colonel McShane: Could I have your name, sir, for the record.

Mr. Ayala: Frank Ayala, San Bernardino City Unified School District.

Colonel McShane: Thank you.

Any other questions, clarifications?

All right. Let me go over some procedures again for the benefit of those who may have come in after we got started.

You were invited to sign in and fill out a speaker's card as you arrived. If you want to speak and have not yet filled out a card, a little one that looks like this, please do so now.

Regarding the making of a statement, elected public officials will be called upon first for their statements, if we have anybody here who fits that category and wants to speak. Then, representatives of organizations and such persons will have approximately ten minutes to speak if they want to use that much. After that, individuals will be called on to make their statements. We will start out with a limit of about five minutes so that everyone who wants to speak will have an opportunity, and we'll come back to you if you have more to say than you can say in five minutes.

If anyone does not wish to make a public statement, or if we run out of time before everyone has an opportunity to speak, or if you have additional comments beyond what you do make as you speak, you may turn in written comments after this meeting, or send them to the address which is provided on the comment sheet.

We'll take just a couple of minutes for me to take care of some administrative matters, line up the cards and that sort of thing, and then we will come back.

If we could be back here in about five, seven minutes, we'll start up again.

**(Brief recess)**

Colonel McShane: Okay. We'll go ahead and get started again. This is the comment portion of this public hearing. This time is set aside to allow you to comment on the content of the briefings and the draft environmental impact statement.

Now we've got two microphones set up, one up here where the briefers spoke from and another over at the side of the room. Please step up to whichever microphone you want so that we're able to hear it and the court reporter's able to get your comments recorded for the record.

I would ask that you state your name and affiliation or address and then make your statement. If you read from a prepared statement which you want entered into the record, please leave it with us before you go.

Now so far I've only got one card. I'll go ahead and call on David Garcia.

Mr. Garcia: Thank you very much for allowing me to speak this morning.

I'm representing the City of Riverside, the Public Utilities Department and the Water Engineering Manager. I want to read a short letter. It's just a page and a half. It's addressed to Patricia Calliott -- is that correct?

Ms. Calliott: That's correct.

Mr. Garcia: And I have already given her a copy of this letter.

But before I start, let me tell you that we're concerned with the water contamination issue -- underground water contamination issue. And I don't see too many representatives from water agencies here; however, what I'm going to be talking about, I think, is generally felt among most water agencies that could be affected as a result of the migration of underground contamination.

For those of you that don't know, the City of Riverside has wells that we operate that are as close as 100 yards from the south fence of Norton Air Force Base to approximately two miles. Seventy-five percent or more of our total water sources that we utilize throughout the entire year actually are right here in the Bunker Hill Basin. So that's why it's so important for us to make sure that the Air Force, EPA, and the Department of Health Services understand our concerns.

We have reviewed the draft environmental impact statement for the closure, withdrawal of units, from Norton Air Force Base dated November 1989 -- am I reading too fast?

The Reporter: No. You're fine.

Mr. Garcia: My daughter is learning how to do that, and that's why I'm trying to read it slowly.

We are primarily concerned with the protracted clean-up effort of underground water contamination within Norton Air Force Base. We are specifically concerned regarding the potential contamination of our water wells adjacent to the base resulting from migration of underground contaminants from the base.

The draft statement generally addresses the underground water contamination issue under Section 4. However, we have concerns regarding certain information contained in the draft in relation to underground water contamination.

There appears to be an inconsistency regarding the amount of current groundwater used by the base and base housing. On page 4-1, the amount reported is 190 million gallons per year. And on page 4-7, the amount is 890 million gallons per year. This is confusing, and we request that reduction of groundwater pumping within the base should not occur until such time as all studies required in accordance with the interagency agreement are completed and effective mitigation measures are commenced to prevent contaminant migration from the base.

On page 4-2, the document asserts, "If contaminant levels are observed to change, consideration will be given to modeling groundwater contaminant transport to determine groundwater pumping or some other strategy as an interim measure to retard plume spread."

We are concerned that this strategy may not be adequately responsive, and that by waiting until contaminant spreading occurs before deciding what actions to take, may result in contamination of our wells.

This is a vital issue to us, and we emphatically believe that the Air Force, EPA, and the State Department of Health Services must take appropriate and timely action to protect against any contamination of our wells.

We are concerned regarding what is contained in the report in connection with existing underground storage tanks. In particular, on page 3-12, it is stated, "As soon as tank tightness testing results are available, the Air Force will develop a plan to manage the tanks. This plan will be submitted for approval to the San Bernardino officials and regulatory authority for this issue."

We believe the report should contain effective mitigation measures in the event the tanks are found to have leaked or are leaking. The tanks that are found to be leaking should immediately be pumped empty, and the contaminant soil adjacent to and under the tanks should be removed.

On page 4-3, the report further states, "Tanks that have corrosion protection and meet other standards for upgrading USTs, underground storage tanks, can remain 'temporarily' closed indefinitely."

Our concern is who will adequately monitor the corrosion protection systems after base closure. We believe it to be superior if the underground tanks that do not continue to be utilized after base closure be either removed or appropriately back-filled in accordance with state standards.

We thank the Department of Air Force for providing us with the opportunity to review and provide comments regarding the draft report.

You can see that we have a vital concern in this because we can't stand to lose any of our wells as a result of contamination migrating off the base. And while we understand that it takes time to clean up the underground contamination, this has been going on for many years, and we really haven't seen any cleanup efforts.

Now, recently there was a report from a consultant for the Air Force that they proposed to start cleaning up at a hundred gallons per minute. Well, 100 gallons a minute is just a mere drop in the bucket. We're suggesting that it should be at the same level as the pumping rate is at the present time to be effective.

Thank you.

Colonel McShane: Thank you, Mr. Garcia.

I didn't get any other cards. Is there anyone else who desires to comment on the draft environmental statement or the presentation of the speakers this morning?

I would remind everyone that there will be another public hearing to be held this evening at the Council Chambers in City Hall, San Bernardino, at 7:00 p.m.

If there are no other speakers, we'll go ahead and conclude the proceeding at this time. Please remember that you do have until the 8th of January 1990 to submit written materials to be included in the transcript of this hearing. And those written statements will be fully considered and addressed in the final environmental impact statement. Once again, oral and written statements or comments will be afforded equal weight.

Officials of the Air Force appreciate your efforts to come out and contribute your views to this public hearing.

We thank you for your courteous attention. This public hearing is adjourned at 9:56.

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**APPENDIX F: PART II**

**Public Hearing Transcript: San Bernardino, December 13, 1989**

Colonel McShane: Good morning, ladies and gentlemen.

I'm Mike McShane. I'm a full-time military trial judge for Air Force courts-martial. I have been designated by the Office of the Judge Advocate General in Washington as presiding officer for tonight's public hearing upon the draft environmental impact statement.

Major Joe Kaiser, the Operational Programming Officer with Military Airlift Command, will brief the closure and realignment actions tonight.

Ms. Pat Calliott, an environmental protection specialist from Military Airlift Command, will talk about the environmental impact analysis process as it relates to base closure.

Dr. Gary Marmer from the Argonne National Laboratory will discuss Argonne's role in preparation of the environmental impact statement and identify the impacts of closure.

This public hearing is being held in accordance with the National Environmental Policy Act, implementing regulations for the Act, and the Base Closure and Realignment Act, Public Law 100-526.

The Air Force has prepared and distributed in accordance with applicable regulations a draft environmental impact statement addressing the impacts of withdrawing troops and equipment from Norton Air Force Base.

This draft environmental impact statement does not address final disposition of reuse of the base. I am not here as an expert on this proposal, nor have I had any connection with its development. I am not here to act as a legal advisor to the experts who will address this proposal. My purpose is simply to ensure that we have a fair, orderly hearing, and that all who wish to be heard have a fair chance to speak.

Let me take just a moment to explain how tonight's hearing will proceed. This isn't going to be a debate nor a referendum or vote upon the action itself. What this informal hearing is intended to provide is a public forum for two-way communication about the environmental impacts of withdrawing troops and equipment from Norton Air Force Base.

The first part of this hearing calls for you to listen carefully to what the experts say as you are briefed on the anticipated environmental consequences. After the briefing, you'll be able to ask questions to clarify any points made in the briefing or in the draft environmental impact statement itself.

The second part of the hearing is for you to tell the Air Force what you think, to give the Air Force the benefit of your knowledge of the local area affected by the action, and any environmental hazards you perceive.

As you came in, you should have been asked to sign in and asked if you wanted to make a statement during this hearing. After the speakers are done and the clarifying questions have been asked, we will take a short break. I will collect the cards of those who want to speak, and when we get back from the break, I will recognize members of the public for the purpose of making comments about the action.

Don't be shy or hesitant about making a statement. This is an informal hearing and your comments are important. I want to help ensure that all who wish to speak have a fair chance to be heard. So please help me enforce the following ground rules:

First, only speak after I recognize you.

Second, speak clearly and slowly, starting out with your full name, address and the capacity in which you appear; that is, as a public official, a designated representative of a private association or a person speaking solely in his or her individual capacity so our court reporter, Mrs. Babykin, who has to make a verbatim record of these proceedings, can do her job professionally.

Please honor any requests from me that you cease speaking. I think we'll have plenty of time for everyone who wants to speak to speak as long as they want tonight, but we're not going to have any filibusters going on either.

Please do not speak while another person is speaking. Only one person will be recognized at a time.

And, finally, there will be no smoking during this hearing. I appreciate your cooperation with that rule.

Now, in addition to having the opportunity to speak tonight, there are comment sheets available in the back of the room. You can either fill those out and leave them with us tonight, or you could add additional comments and mail them to the address on the bottom of the form.

Your statements, your written comments can be submitted at any time prior to 8 January 1990, by mailing them to Pat Calliott at the address on the form.

Regardless of whether you put your statement in the record tonight or mail it in later, it will be carefully considered and made part of the record of these proceedings. It will have equal weight and receive the same careful consideration whether made during tonight's hearing or afterward.

I would like to thank everyone who turned out tonight. Your presence here is commendable in that it reflects a great interest in your community and in those things that are important to it. Let me assure you that your interest is the primary purpose for us being here.

With that, I'd like to turn it over to Major Kaiser to brief on the closure and realignment actions.

receive these units had to have the capacity to receive the activity or the unit, or that capacity could be created by another simultaneous move with the large organizations on that particular base.

The mission enhancement factors that they used for these gaining bases are listed here. The new base did not have to fulfill all of these factors, but, at least, the majority.

While the functions here at Norton are not a split function of any type, with the move of 12 C-141 aircraft to McChord, we will be consolidating some C-141 activities.

Any realignments would have to improve the training, mobilization, and command and control of the units involved. Moving out of a congested air traffic area around Norton and decreasing the number of military aircraft in this area should enhance the training that remains here at March.

With the high cost of deteriorating facilities, operation costs will be decreased with the building of newer, more efficient facilities at March and the other locations. While we will not necessarily improve the airlift service to other DOD and government functions, we will maintain the capability to provide service to units in the West.

In the relocation to March we hope to take this opportunity to improve facilities and, perhaps, enhance the way we're able to do business to our customers or to other agencies.

With the new medical and dental facilities currently programmed for March, we hope to see an improvement in the quality of life for our Air Force people. The relocation to March and other bases with excess capacity fits the established criteria of the closure commission.

The commission's recommendations then for relocation are the following:

The 63d Military Airlift Wing and 36 C-141s would relocate to March. The 63d is the parent wing or host wing here at Norton currently. They would relocate to March and become a tenant on that base.

The 445th Military Airlift Wing would also move to March. This is an associate reserve wing at Norton that will also transfer. They are tied together by their flying mission. Two of three squadrons would also relocate with the wing.

The 1400th Military Airlift Squadron, which has 4 C-12s and 4 C-21s, would also relocate to March Air Force Base as well as the Air Force Audit Agency.

Twelve of the current 48 aircraft, C-141s, that are at Norton would be relocated to McChord Air Force Base in Washington. And their associated personnel authorizations would transfer with the aircraft.

The Aerospace Audiovisual Service, or AAVS, is programmed to remain at Norton. In the public scoping meeting in March of this year it was stated that AAVS would move to March. Due to budgetary constraints, the current decision is to leave

Major Kaiser: Thank you, sir.

Good evening. I'm Major Joe Kaiser from the Operational Programs Division, which is under the Directorate of Plans and Programs of the Military Airlift Command.

Tonight I'm going to talk to you about the closure and realignment actions recommended by the Defense Secretary's Commission on base realignment and closure.

First, I'll talk about the rationale for selecting Norton as a closure candidate.

Next, I'll discuss the commission's criteria for the relocation of activities currently at Norton. Then, I will highlight the recommendations of the commission as well as those of the Air Force.

Finally, I will outline and summarize the moves that will take place to relocate units from Norton in order to achieve base closure.

In December of 1988, the Base Closure Commission recommended Norton Air Force Base as a closure candidate. And in January of 1989, the Secretary of Defense approved the commission's recommendations.

The commission's report stated that the military value of Norton is lower than other strategic airlift installations because of a combination of increasing air traffic congestion, outdated facilities, and an increasing cost of operations.

With the closing of Norton, we will consolidate some C-141 operations. Twelve C-141 aircraft and associated personnel authorizations will relocate to McChord Air Force Base in Washington. This is already a C-141 base.

Another factor was the known operating deficiencies -- or known deficiencies at Norton. These deficiencies result in a high cost of operation and maintenance. Because of the less than optimum conditions of these facilities, there is a higher than normal expenditure for required maintenance, repair, and periodic replacement. There is also a shortage of weapon storage facilities. And the utilities and most other facilities at Norton need a general upgrading.

In the area of quality of life, Norton has a prominent shortage of family housing units as well as inadequate medical, dental, and recreational facilities.

Due to the ever growing population in this area, there is also an associated increase in air traffic congestion. This is not conducive to the training and mission requirements of a military airlift wing.

Again, these were the primary reasons behind the selection of Norton for closure. This is not necessarily an area for discussion or comment here this evening. It was simply presented here as background information leading up to the need of an environmental assessment.

After the commission determined which bases they were going to study for closure, they had to determine where the affected units could be relocated. The bases to

them at Norton and isolate them in their current location. The commission's report allows us to do either a March move or maintain them at Norton.

The Ballistic Systems Division and those particular tenants which support BSD will remain here at Norton. They will be isolated in the containment area. This is the stated position of the Base Closure Law and the commission's report.

The Air Force Inspection and Safety Center would move to Kirtland Air Force Base in New Mexico. This action will consolidate functions with the Nuclear Surety Division, which is already located at Kirtland.

Additional Air Force recommendations:

The Air Force Logistics Command currently has three detachments at Norton Air Force Base. One detachment will remain here at Norton in order to support the Ballistics Systems Division. The other two detachments are scheduled to move to McClellan Air Force Base, also in California.

The 1380 School Squadron, which is the Military Airlift Command's Noncommissioned Officer Academy in the West, will move to Travis Air Force Base. Also not listed here is the 2nd Air Force Noncommissioned Officer's Leadership School. They will transfer to MacDord Air Force Base in Washington.

This map gives you a picture of the move actions which will take place for the closure of Norton Air Force Base.

And this is another listing of how the activities and units will be divided and relocated for the bases.

Finally, this diagram shows the migration of the number of personnel authorizations involved in the closure action. It is broken down by military, civilian, and Air Force Reserve drill personnel. If you're not familiar with drill personnel, they are those people who come in and serve on weekends and during the summer. They're not full-time military.

These numbers also include those people who will be remaining at Norton who will be associated with AAVS, Aerospace Audiovisual Service, and the Ballistics Systems Division.

This concludes my portion of the presentation. Pat Calliott from Headquarters MAC.

Ms. Calliott: Thanks, Joe.

Good evening, ladies and gentlemen.

This evening I'm going to talk to you very briefly about the Air Force's environmental impact analysis process and how we will satisfy the requirements of the National Environmental Policy Act in disclosing the closure of Norton Air Force Base.

For those of you who were at the scoping meetings which were held in March of this year, we told you at that time there were going to be two environmental impact statements (EISs) prepared on the closure.

The first of the EISs will discuss the withdrawal of the units, the cessation of operations, and the removal of personnel and equipment.

The second environmental impact statement will deal with the disposal of the land and the subsequent reuse of the base.

Now at the time of the scoping meeting, we tried to obtain comments from you on both of the documents. The scoping comments for the first environmental impact statement were required by the 7th of April. And it's that first environmental impact statement that causes us to be here this evening.

Now as Colonel McShane said, for those of you who would like to comment, if you don't want to comment verbally this evening, you can fill out the comment sheets that were at the door or send us a letter. The address to which to send those comments is in both the agenda and on those comment sheets.

Now I'd like to give you practical examples of what you might expect to see in each of the environmental impact statements. This first document will discuss, for example, socioeconomic effects, only as there is a biophysical interrelationship.

The second environmental impact statement would be expected to discuss more effects.

The first environmental impact statement would discuss the transport of hazardous materials to a new location. And the second environmental impact statement would discuss the cleanup of the base itself.

Now there is no schedule at the present time for the disposal and reuse document. As you probably know, we're still in the alternatives development stage. So while we don't know exactly when the document would start, we anticipate that it will be sometime next year.

Okay. Would you put this next slide on. Thank you.

I'd like to show you some of the changes in the Environmental Impact Statement process caused by Public Law 100-526, which is the base closure law.

This shows that we will not discuss the need, purpose, or the reasons for the withdrawal as we customarily would.

We also will not consider alternative locations for the withdrawn units. And, of course, the decision on closure itself is outside the scope of this environmental impact statement.

Now, this next slide is the one that you'll find reproduced in your handout, so I'm certainly not going to go into each item. The scoping meetings are shown here, which was an opportunity for public input. And probably the most important period for you

right now is the comment period, which we're in. That period will end on the 8th of January of next year. And it's quite important that we receive any comments from you.

Now I'm going to turn over to Dr. Gary Marmer of Argonne National Laboratory. We need technical assistance to prepare this environmental impact statement, and it was the people at Argonne who are going to help us.

Dr. Marmer: Thank you and good evening.

The draft EIS was prepared by the staff of the Environmental Assessment and Information Sciences Division of Argonne National Laboratory for the Military Airlift Command.

Argonne is a government-owned, contractor-operated laboratory near Chicago, Illinois. We have been preparing environmental impact statements since 1972, initially for the Atomic Energy Commission, and subsequently, for other Federal Agencies.

Our staff consists of professionals in all the relevant disciplines from groundwater hydrology to socioeconomics.

Argonne's staff visited the base this past March and participated in the scoping meetings. Data used in the analysis were obtained from base personnel and federal, state, and local offices. Comments provided during the scoping that were relevant to the closure of the Norton Air Force Base were taken into account in preparation of the EIS.

The draft EIS under consideration addresses impacts expected to result from the closure of Norton Air Force Base and the realignment of units and associated equipment to other bases, principally, March Air Force Base. Impacts from the reuse of the facilities are not considered in this document.

As a result of the scope of the EIS, there are positive as well as adverse impacts expected to occur. The major adverse impact projected is a slight increase in traffic congestion on area highways and intersections in an already congested region. These transportation impacts result primarily from people commuting from North Air Force Base to March Air Force Base.

The major positive impacts resulting from the withdrawal of units from Norton Air Force Base are:

- A reduction in emissions of air pollutants from the base and its vicinity;
- A reduction of groundwater consumption by the base, thus increasing the groundwater availability for other users;
- Elimination of noise associated with aircraft landings, departures, and ground activities; and, finally,

- A reduction in the generation of hazardous wastes at the base, lessening the potential for spills and contamination related to the generation of storage and handling.

Thank you.

Colonel McShane: Thank you Major Kaiser, Ms. Calliott, and Dr. Marmer.

Let me go over some of the procedures again for the benefit of those who may have come in after we got started.

You were invited to sign in and fill out a card if you wanted to speak. If you do want to speak and have not filled out a card, please do so during the short break we're going to have.

Regarding the making of a statement tonight, elected public officials will be called upon first for their statement, then representatives of organizations, and then private individuals.

If you do not wish to make a public statement, you may turn in written comments after this meeting, or send them to the address provided on the comment sheet.

We'll take a short break at this time so that I can collect the cards and get ready for the second part of the meeting. We're in recess.

(Brief recess)

Colonel McShane: Okay. If you'll please come to order. This is the comment portion of the public hearing. This time is set aside to allow you to comment on the content of the briefings and the draft environmental impact statement.

What I'd like to do first is ask if there are any questions about any matters which were covered in the presentations or if there are any questions about the draft environment impact statement itself that the members of the panel might be able to clarify for you.

(No response)

Apparently not.

During the break, I ascertained that there were no speakers who had yet identified themselves and indicated they wanted to speak about the proposal. I would like to offer this opportunity to the folks in attendance to once again come forward and speak about the Draft Environmental Impact Statement or about the briefings if you desire to do so.

Sir, when you get to the microphone, I'd just like to have you state your name, your address, and any affiliation you might have.

Mr. Cohen: Okay. My name is Harvey Cohen, 3933 Severance, San Bernardino. And I'm just here on my own, a private citizen.

And I was wondering, will the well water around Norton be tested, not just on the base, but will it be tested in the general area for pollutants and so forth?

Ms. Calliott: Lieutenant Wright.

Lieutenant Wright is one of the base experts on the installation and restoration program.

Would you like to make an attempt to respond to what we're doing under that program?

Lieutenant Wright: Mark Wright. I'm 1st Lieutenant in charge of environmental planning at Norton Air Force Base.

We currently do have a monitoring program which includes certain off-base wells, and we will be expanding that program in the very near future to include additional off-base wells.

In addition, we coordinate closely with the County of San Bernardino and other local agencies to share information on wells and what we find when we monitor and test wells.

Mr. Cohen: How far will the radius be?

Lieutenant Wright: That will be determined based on what we find. Obviously, as we look at the picture, if we need more information, we'll go out further.

Mr. Cohen: Is the water safe to drink around there now? Are there any pollutants coming up in the tests in the groundwater?

Lieutenant Wright: The question that you ask is very -- it's a broad question. There is a difference between contamination and pollution. And rather than getting into a technical discussion at this time, the water is certified and verified by the City and County. So if you have any questions about the water that you're drinking, that would be the appropriate agency to address it to.

Mr. Cohen: Well, I just wondered if the source of possible pollution was coming from Norton. I just wondered if the air base would help clean it up before they left.

Lieutenant Wright: The Air Force has several times, everywhere from the commander of the base down to my office, that any contamination problem that is derived from an Air Force source will be handled and taken care of by the Air Force whether we're here or not. That may be a long process, but the Air Force will be responsible for that regardless of whether Norton closes today or five years from now.

Mr. Cohen: Thank you.

Lieutenant Wright: Thank you.

Colonel McShane: Thank you.

Are there any further questions or comments from any of the audience?

(No Response)

Apparently not.

We will conclude these proceedings at this time. Please remember that you have until 8 January 1990 to submit written materials to be included in the transcript of this hearing. And those written statements will be fully considered and addressed in the final environmental impact statement. Once again, oral and written statements or comments will be afforded equal weight.

Officials of the Air Force appreciate your efforts to come out tonight and to contribute your views to this public hearing.

We thank you for your courteous attention.

This hearing is adjourned at 7:40.

**APPENDIX G**  
**ENVIRONMENTAL ASSESSMENT OF**  
**INTERIM USE OF HANGAR 763\***

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\*The following report was issued by the U.S. Air Force in April 1990 and is reproduced here in its original form.

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## ENVIRONMENTAL ASSESSMENT

JOINT AND INTERIM USE OF DOCKS 3 AND 4  
HANGAR 763 AT NORTON AFB CA BY THE  
INLAND VALLEY DEVELOPMENT AGENCY AND  
SUBLESSEE LOCKHEED AIR SERVICES CORPORATION  
PRIOR TO CLOSURE OF NORTON AFB CA

UNITED STATES AIR FORCE  
APRIL 1990

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## FINDING OF NO SIGNIFICANT IMPACT

### JOINT AND INTERIM USE OF DOCKS 3 AND 4, HANGAR 763

#### AT NORTON AFB CA

#### DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The proposed action is an interim, joint use of Norton Air Force Base (AFB) facilities that is being considered as the result of the recommendations of the Defense Secretary's Commission on Base Realignment and Closure and legislative requirements in the Base Closure and Realignment Act (Public Law 100-526). The Base Closure and Realignment Act directs the withdrawal of personnel and closure of Norton AFB. The Act will be implemented by relocating the mission and related support activities to other existing bases.

The proposed action is to lease a portion of Hangar 763 at Norton AFB to the Inland Valley Development Agency (IVDA), a Joint Powers Authority under California law. A sublessee (Lockheed Corporation) would conduct commercial aircraft maintenance and modification in these facilities. The facilities would be jointly used with the Air Force prior to the closure of Norton AFB. Use of these facilities by Lockheed would require modification in two of the four bays. Joint use would begin in April 1990 and last until June 1994. At that time Norton AFB will be closed and new arrangements will be required. Lockheed proposes to perform heavy maintenance checks and structural improvements on Boeing 747 aircraft. Current projections are for two to three flights per month.

The interim use will be a phased process where modifications will be constructed as Lockheed's requirements expand and the Air Force withdraws from Norton AFB. At the start of the action, approximately 630 personnel are expected to be employed by Lockheed. As the Air Force ceases operations, this number could increase to approximately 970.

This interim and joint use of Norton AFB by Lockheed Corporation does not prejudice future reuse plans for the base. The IVDA is preparing a reuse plan for Norton which is to be submitted to the Secretary of the Air Force in mid-1990. The Department of the Air Force has made no decision regarding potential reuse of the base pending the Environmental Impact Statement and Reuse Disposal Plan that will be prepared.

Under the no action alternative, the Air Force would continue present C-141 maintenance operations in Hangar 763. Neither the lease with IVDA nor the sublease with Lockheed Corporation would take place.

#### SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS

The interim joint use action would neither alter land use surrounding the base nor restrict future development in that area. The proposed use is consistent with the mission of the base. The following paragraphs summarize the anticipated environmental impacts:

**Land Use:** No land will be disturbed by this action. The current land use surrounding Norton AFB is a mix of residential, commercial, and industrial uses. The proposed action will not affect current land uses.

**Noise:** The small number of aircraft associated with this action and current Air Force operations will not generate an increase in noise at Norton or the surrounding area. As the Air Force ceases operations and Lockheed activity remains, noise generation is expected to decrease.

**Air Quality:** The majority of the additional personnel currently reside in the surrounding areas; therefore impacts to air quality due to motor vehicle emissions are expected to be minimal. The small number of aircraft and the minimal number of associated operations (one landing and one takeoff) will not significantly impact air quality. Emissions from maintenance activities (stripping, painting, fuel, etc) are also expected to be minimal due to the small number of aircraft involved in the action.

**Water Supply and Quality:** The proposed action will not require significant amounts of water, and is not expected to impact water quality.

**Waste Management and Hazardous Materials:** The number of personnel will not significantly effect the demands on wastewater treatment facilities. The use and storage of hazardous materials will be in accordance with local, state and federal regulations and will be monitored by Air Force personnel. There will be an increase in the generation of hazardous waste, but existing disposal plans are adequate to meet the increase. Hazardous wastes will not be stored longer than 90 days in approved containers. Lockheed will be required to follow the Norton AFB Spill and Hazardous Waste Management Plan. These increases are not expected to have a significant impact.


Biological Resources: Two threatened and endangered species occur near the Santa Ana River floodway (about 2500 feet south of the hangar). There are several candidate species that may incidentally occur at the base. This action will not disturb these areas and therefore will not impact any threatened or endangered species or state species of special concern.

#### SOCIOECONOMICS

Norton AFB is located in a highly developed urban area (San Bernardino and Redlands). The interim use is expected to employ approximately 630 personnel with a long range projection of 970 personnel as the Air Force ceases operations. A majority of these employees are expected to be current residents of the surrounding area. An addition of about 400 students is expected. The impacts to housing, school systems, fire, police, utilities, and medical resources are expected to be minimal. Positive impacts from construction modifications are expected to be minimal and of short-term duration. Positive impacts resulting from employees' salaries are also expected to be minimal.

#### CONCLUSIONS

From a review of the Environmental Assessment (EA), I have concluded this action will not have a significant impact on the environment.

  
THOMAS J. BARTOL, Lt Col, USAF  
Director  
Program & Environmental Division

1 Atch  
Environmental Assessment

DATE: Apr 5, 1990

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ENVIRONMENTAL ASSESSMENT

JOINT AND INTERIM USE OF DOCKS 3 AND 4, HANGAR 763  
AT NORTON AFB CA BY THE INLAND VALLEY DEVELOPMENT  
AGENCY AND SUBLESSEE LOCKHEED AIR SERVICES CORPORATION  
PRIOR TO CLOSURE OF NORTON AFB CA

UNITED STATES AIR FORCE  
APRIL 1990

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## Supplemental Data

### Environmental Assessment and Finding of No Significant Impacts

Add to Page 23, Para 3.35 and last paragraph.

IRP Site #9 is an old electroplating shop located within Hangar 763; however, it is located outside the limits of Docks 3 and 4 which will be utilized by Lockheed. This contamination was detected in the soil beneath the hangar. The hangar floor has been paved since the spill of plating waste with two 12-inch layers of concrete; it is effectively capped. Upon the determination of the extent and type of contamination, cleanup efforts will be agreed upon by all concerned parties. This site is not expected to cause any significant impacts to the use of Docks 3 and 4.

Add to Page 10, Para 2.1.3 end of 2nd paragraph.

Due to proposed civilian use of Runway 6/24, a waiver to explosive safety regulation AFR 127-100 will be prepared and processed by Norton AFB and HQ MAC.

Add to Page 19, Para 3.23 and to end of paragraph at top of page.

Due to proposed civilian use of facilities and space within the AICUZ clear zone, a waiver to the AICUZ clear zone will be prepared and processed by Norton AFB and HQ MAC.

Add to Page 3, Para 1.2 end of 1st paragraph.

It is remotely possible that during one of the three monthly takeoffs, an abort (emergency condition) may take place; however, a 747 aircraft as configured for this maintenance work would be able to leave the flight pattern using two of its four engines.

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**1.0            PURPOSE OF AND NEED FOR THE PROPOSED ACTION AND  
                 ALTERNATIVES**

**1.1            Introduction**

This assessment reviews the environmental consequences of a proposed action to lease hangar 763 and its facilities at Norton AFB to the Inland Valley Development Agency (IVDA), a Joint Powers Authority under California law. A sub-lessee would modify the facilities and conduct commercial aircraft maintenance. These facilities would be jointly used with the Air Force prior to the closure of Norton AFB. No decisions have been made by the Air Force regarding the long-term reuse of the base and its facilities. An Environmental Impact Statement (EIS) on reutilization of Norton AFB will be prepared by the Air Force prior to that decision.

This action and its consequences are of an interim nature and will result from a short-term lease arrangement between the Department of the Air Force and IVDA which is currently studying the interim and long-term reuse potential of the base. Senate Bill 1498 signed by the Governor of California on October 1, 1989, discusses the state acquisition of airports and navigation facilities. Simply stated, any airport owned/operated by the United States and subsequently closed must be utilized for aircraft purposes. Should the local agencies not wish to undertake the operation of said airport, the state is empowered to acquire the facility and manage it for aircraft purposes.

The Inland Valley Development Agency (IVDA) is an economic development agency created by State Assembly Bill 419. This legislation created a joint powers authority to be made up of communities surrounding Norton AFB which may be affected by the Base's closure. See Figure 1 for the limits of the agency's authority. The IVDA has undertaken a number of studies which have focused on continuing to use the flightline and its associated facilities as an active airport. However, the prospective sublessee, Lockheed Corporation, has been notified that local entities may eventually decide it is in the best interest of the surrounding communities not to use base property to support an active runway.

The decision to close Norton AFB, CA resulted from a recommendation of the Defense Secretary's Commission on Base Realignment and Closure. The Base Closure and Realignment Act (Public Law 100-526, October 24, 1988) authorized the Commission to make recommendations and required the Secretary of Defense to implement the recommendations for closure and realignment unless either he rejected them in their entirety or the Congress passed (and the President signed) a Joint Resolution disapproving the Commission's recommendations.

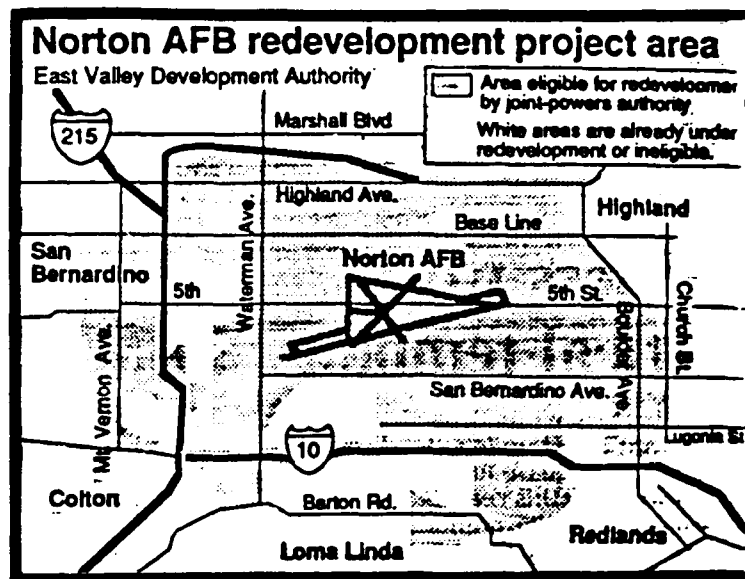


FIGURE 1.1 LIMITS OF IVDA AUTHORITY

On December 29, 1988, the Commission recommended the realignment and closure of 145 installations. Norton AFB, CA was listed among the bases recommended for closure. On January 8, 1989, the Secretary of Defense approved those recommendations and announced that the Department of Defense would implement them. The Congress did not pass a Joint Resolution disapproving the recommendations within the time allotted by the Act. The Act now requires the Secretary of Defense, as a matter of law, to implement the closure of Norton AFB, CA. Implementation of the closure must be initiated by September 30, 1991, and must be completed no later than September 30, 1995. Thus, the decision to close Norton AFB is final, though reuse issues have yet to be addressed.

A separate Environmental Impact Statement is being prepared which will discuss the closure of Norton AFB. Actions relating to the interim use of Air Force facilities and the eventual reuse of all excess property at Norton AFB, CA must comply fully with NEPA, as implemented by the President's Council on Environmental Quality (CEQ) regulations and Air Force Regulation (AFR) 19-2.

#### 1.2 Purpose and Need

The IVDA, in an attempt to develop interim use of facilities prior to the closure of Norton AFB, is working with a potential sublessee, Lockheed Corporation, on a commercial proposal involving Hanger 763. The sublessee's proposal is to establish a commercial aircraft maintenance and modification center in two of the four bays in Hanger 763. There is an urgent need in the commercial aircraft fleets for quality maintenance centers. The request is for use of the facilities beginning in April 1990 and lasting at least until June 1994, when the Base closes and new arrangements will be required. Lockheed, as sublessee proposes to perform heavy maintenance checks and structural improvements on Boeing 747 aircraft. Current projection is for one flight operation (landing/take-off) to occur every three weeks or two to three flights per month (24 to 36 aircraft per year).

The types of activities proposed in this commercial maintenance operation includes washing the aircraft prior to placing it in the hanger, accomplishing "C" and "D" commercial maintenance checks and mandated structural modification, specifically an industry standard Section 41 modification.

A "C" check involves a thorough inspection of the entire aircraft. All major aircraft systems are "operationally cycled" while on the ground. Some components that are time-limited are replaced. All items requiring lubrication are serviced and most of the aircraft filters are changed. Under the proposed action, any components that require rework will be sent to outside vendors.

A "D" check is the 747's major inspection. In addition to all the "C" check inspection items, the main structural members are x-rayed and repaired as necessary. All FAA Air-worthiness Directives (ADs) and Service Bulletins are completed at this

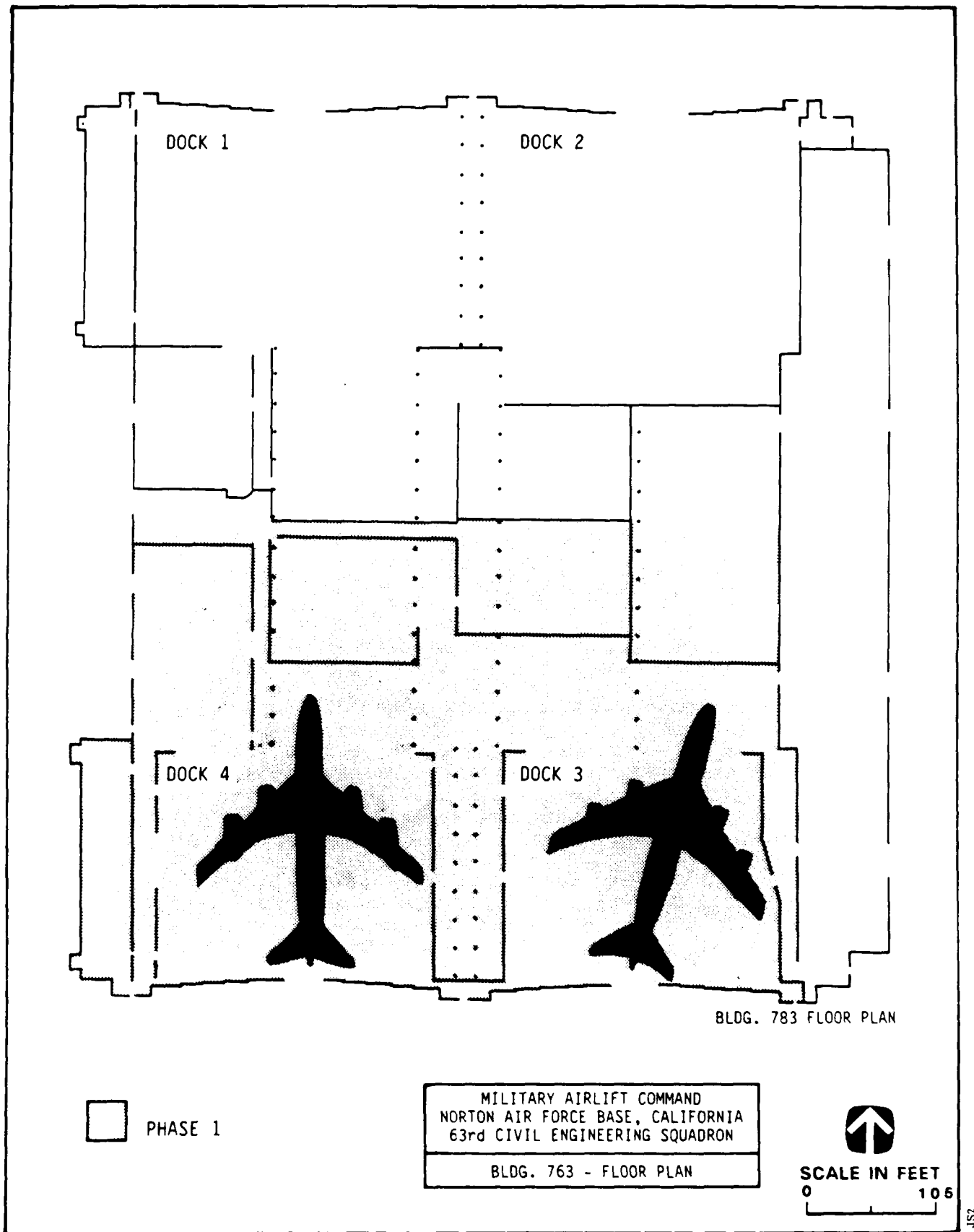


FIGURE 1.2 PHASE I USING DOCKS 3 AND 4 OF HANGER 763

time. A "Section 41" will also be accomplished; this is a special modification of the nose section of the 747. Selected skins and frames are replaced to improve the fatigue tolerance of the nose section.

### 1.3 Location of Proposed Action

The proposed action at Norton AFB will be in facilities that will first be jointly used and later vacated by the USAF. These facilities consist of:

- 1) two (2) aircraft bays in Hangar 763 which are approximately 48,000 sq. ft. each
- 2) shop space between the bays of 12,000 sq. ft.
- 3) 12,500 sq. ft. of shop space adjacent to and north of Bay 3
- 4) aircraft parking space of approximately 123,000 sq. ft.
- 5) 40,000 sq. ft. of shop and warehouse space
- 6) vehicle parking space for approximately 450 vehicles which amounts to about 80,000 square feet

Lockheed projects a work force of approximately 630 people. The operation will be 24-hours a day, seven (7) days a week. The day shift (0700-1500) will probably have 350 people, the swing shift (1500-2300) will have a staff of 200, and the late shift will have 75 people. In the event Lockheed is authorized to continue use of the facilities after the base closure, their Phase II plans project use of the entire Hanger. Total workers would increase to 970 people. No decision on Phase II will be made until the reuse EIS is complete (about summer 1991).

### 1.4 Environmental Regulations

IVDA, or Lockheed, as its sublessee will be required to design, operate and maintain an environmental compliance program while conducting 747 maintenance operations at Norton AFB. The environmental program staffing and implementation will be reviewed by the Air Force.

IVDA, or Lockheed will be required to obtain and maintain all applicable permits related to its operations at Norton AFB. Permits shall be inclusive and include: air quality equipment/operations; local hazardous material/waste handling operations; state and federal permits governing the generation of hazardous wastes; and applicable water quality/discharge activities. Furthermore, IVDA (or Lockheed) will be responsible for all required reports to local, state, and federal authorities involving their operations. The IVDA and Lockheed, as their sublessee, will remain primary responsible parties for any spill/remedial required action caused by any action undertaken by the sublessee or its employees. IVDA or its sublessee will be

required to maintain a liaison with Norton Air Force Base environmental personnel. The IVDA and its sublessee will notify the Air Force of any action requiring notification of federal or state environmental authorities, as the Air Force will retain responsibility for such notifications during interim use.

IVDA or its sublessee will be required to comply fully with laws and regulations involving:

- Air Quality: (a) Clean Air Act & Amendments  
(b) South Coast Air Quality Management;  
and  
(c) CFR Title 40 Parts 50-52, 61, 62, 65-67 and 81

- Hazardous Materials: (a) Hazardous Materials Transportation Act (Department of Transportation requirements)  
(b) Emergency Planning and Community Right-To-Know;  
(c) California Health and Safety Code, Chapter 6.95  
(d) CFR Title 49 Parts 100-179;  
(e) CFR Title 40 Part 302; and  
(f) California Code of Regulations Title 19

- Hazardous Waste: (a) Resource Conservation and Recovery Act (RCRA) of 1976 and RCRA Amendments of 1984;  
(b) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980;  
(c) California Health and Safety Code, Chapter 6.5, 6.8 and 6.9;  
(d) CFR Title 40 Parts 260-271, 300, 302;  
(e) California Code of Regulations Title 22, Chapter 30.

- Water Quality: (a) Clean Water Act and Amendments;  
(b) Safe Drinking Water Act;  
(c) California Health and Safety Code, Chapter 6.6; and  
(d) CFR Title 40 Parts 100-143, 401 and 403

In addition to meeting ongoing requirements in the public laws set forth above, IVDA has expressed the intention to accommodate any Norton AFB, federal, or state agency recommendation and/or substitution with regard to environmental compliance.

The proposed sublessee, Lockheed, currently conducts similar aircraft maintenance at other locations. Representatives from Lockheed have stated the company will ensure environmental compliance through programs of risk reduction and pollution

prevention. Lockheed has expressed its commitment to apply Best Available Control Technology (BACT) in maintaining environmental compliance. In proposing this action, Lockheed has expressed an intention or commitment to utilize similar or less hazardous chemicals than those currently being used in maintenance activities in Hanger 763.

## **2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

### **2.1 The Proposed Action**

The Air Force is currently using bays 3 and 4 of Hangar 763 to accomplish maintenance on C-141 aircraft. See Figure 2.1 for relationship of hanger to flightline facilities. It is possible for the 63rd Military Airlift Wing to consolidate their depot work into two bays (1 & 2) thus freeing up the bays to accommodate the proposed action to establish a commercial maintenance and modification center specializing in 747 aircraft. Joint use will continue until Norton AFB closes. Lockheed will then be permitted to continue operations on an interim basis until a decision regarding reuse has been reached.

When Norton AFB was listed on the base closure list, the California Congressional delegation requested Lockheed to evaluate these facilities to determine if they could be used to bring new jobs to the area when the USAF departed. Lockheed advised the Air Force and the IVDA that Hangar 763 could accommodate 747 aircraft, a part of Lockheed's planned expansion. In 1984, Lockheed established a commercial aircraft maintenance center in Greenville, SC, at the former Donaldson Air Force Base site. The need for this type of work led Lockheed to establish a second center in Tucson, Arizona, in 1989. This experience gives Lockheed the credibility with the commercial aircraft operators to ensure success with the 747 maintenance proposal at Norton. The IVDA is preparing a re-use plan for Norton which is expected to be submitted to the Secretary of Air Force in mid 1990. The Department of the Air Force has made no decision regarding potential re-use of the Base pending its Environmental Impact Statement and Reuse Disposal Plan being prepared on that subject.

#### **2.1.1 Mission**

The proposed action will permit a joint use of Norton AFB, specifically Hanger 763, by Lockheed Corporation, sublessee to the Inland Valley Development Agency (IVDA). Lockheed proposes to conduct commercial maintenance on Boeing 747 aircraft, similar to the type of maintenance conducted by the Air Force on C-141 aircraft at Norton AFB. After Norton AFB closes, Lockheed proposes to continue operations until a decision is reached on reuse of the base. No decisions regarding the long-term reuse of the base and its facilities have been made by the Air Force.

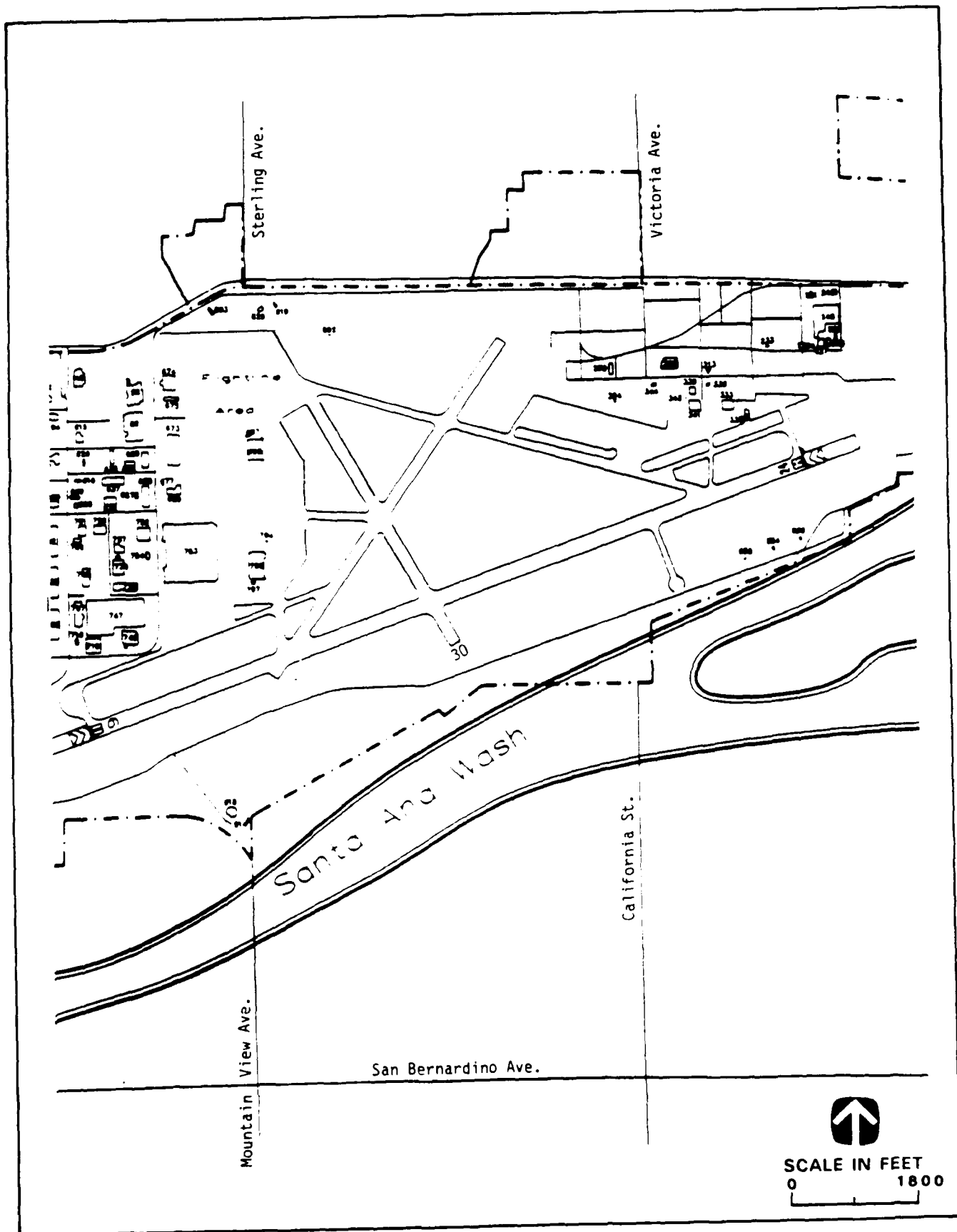


FIGURE 2.1 HANGER 763 AND FLIGHTLINE FACILITIES

## 2.1.2 Construction Associated with the Proposed Action

Before commercial maintenance operations can begin, Lockheed proposes to complete, at no cost to the Air Force, the following modifications to Bays 3 and 4 in Hangar 763. (Lockheed will also assume costs to relocate present Air Force operations that currently occur in Bays 3 and 4 to other areas of the hangar).

- 1) Fire Walls. The existing walls will be removed and a new wall with a three-hour fire rating will be installed to isolate the hangar bay from the shop area. Doors in the wall will be fire rated.
- 2) Fire Protection System. To comply with National Fire Protection Association (NFPA) 409 an overhead AFFF/water deluge system will be installed. In addition, underwing foam/water monitor nozzle to cover the area of the aircraft will be installed.
- 3) Draft curtains. Draft curtains will be installed just below the hangar roof as required by NFPA 409. These curtains will be made of light-weight metal, such as building siding materials and reinforced with proper steel members.
- 4) Fire Detection and Alarm. A complete new fire detection and alarm system for the hangar bays will be provided. In order to comply with NFPA 409, an overhead fixed-temperature, rate-compensated detection system will be installed along with a combination ultraviolet-infrared detector system for the underwing monitor nozzle system. A noncoded fire alarm system will be provided with audible alarms.
- 5) Utilities. A new power distribution and compressed aircsystem will be installed.
- 6) Slab-at-Grade. Preliminary information indicates that the hangar floor slab is made up of two 12-inch slabs. The existing slab joints will be cleaned and rejointed. The slab slopes about 8 inches from the back to the front at the hangar doors. To collect and direct this flow away from the hangar, a trench will be added along the door track foundation. The existing slab will be saw cut, approximately a 5-foot wide strip removed, and a concrete trench with grating cover will be installed. Discharge from this trench will be through an oil/water separator prior to discharge into the collection system.

No significant environmental effects will result from the construction associated with this proposed action.

### 2.1.3 Aircraft Operations

In addition to Air Force current operations, Lockheed proposes to service approximately 24 to 36 Boeing 747 aircraft over a twelve (12) month period. These aircraft will land, undergo maintenance, then take-off. Lockheed will not be conducting flight or proficiency training. Current Air Force operations can be found on Table 3-1. In summary, the daily average of operations is: 103 for C-141 aircraft; and approximately 32 operations for all other aircraft. The addition of 2 to 3 aircraft per month is not considered significant.

In most circumstances, Lockheed will be utilizing its own ground support equipment unless prior approval has been granted by the Air Force for use of their equipment. All Lockheed personnel will be certified to operate and maintain the equipment used in support of this proposed action.

No engine maintenance is anticipated for the proposed action. Limited engine run-up and testing may be required to check gauges after oil/fuel has been refilled, however this will not occur during normally designated quiet hours (10:00 p.m. to 6:00 a.m.). All activities associated with engine maintenance will be coordinated between the Air Force, the IVDA, and Lockheed.

#### 2.1.3.1 Accidental Potential Zones and Compatible Land Uses

The proposed action will not change the size requirements of the accidental potential zones. Nor will the proposed action change any land use requirements.

### 2.1.4 Hazardous Materials Management

All hazardous material storage and usage will comply with policies and procedure outlined in the Lockheed Air Services Safety Manual and Environmental Management Manual and the Norton AFB Hazardous Waste Management Plan. All hazardous materials operations shall be comply with local, state and federal regulations. Lockheed will maintain an on-site list of all hazardous material used with accompanying Material Safety Data Sheets (MSDS). Annual training shall be given to all employees by Lockheed on hazardous materials. A Lockheed representative will be available on a daily basis to answer any Air Force questions. Portable units will comply with all applicable State and Federal standards. Inside the hangar there will be individual storage cabinets for flammables, corrosives and combustibles. They will comply with federal and state fire protection standards and subject to inspection by USAF, state, and federal agency personnel.

Lockheed will be responsible for completing and obtaining approval for an independent (from Norton AFB) hazardous waste, fuel and chemical spill plan.

#### 2.1.5 Liquid Hazardous Wastes

During alterations of hanger 763, minor amounts of chemicals will be utilized in stripping the existing paint from the hangar floor. All debris, broken concrete, wallboard and other material will be transported to an approved landfill. Any friable asbestos removed will be handled as a hazardous waste and appropriate local, state and federal regulations will be followed. Minor, temporary impacts are expected.

The hazardous wastes generated by this proposed operation will be disposed of through recycling, treatment, and incineration methods utilizing only EPA and State of California approved vendors. The hazardous waste will be stored for a period not to exceed the allowable 90-day exception for generators. A containment allowing for 150% of maximum capacity will be utilized, and segregation of incompatible hazard classes will be strictly enforced. On a daily basis all hazardous waste accumulation/storage sites will be inspected by knowledgeable IVDA, or Lockheed personnel. A listing is provided on the anticipated waste streams. The proposed operation is estimated to produce about seven (7) drums of liquid and thirteen (13) drums of solid hazardous waste per quarter (3 month period). (This data was projected from current Lockheed operations at Ontario.) See Table 2.1. Any proposed changes to this procedure shall be approved by the appropriate Air Force personnel, federal, and state agencies prior to implementation.

Current Air Force generation of liquid hazardous wastes from hanger 763 operations, not including jet fuel, is 447 gallons per quarter. Lockheed's projected use is 2250 gallons per quarter with 1,250 gallons of jet fuel being returned to bulk storage for reuse.

TABLE 2.1 LIQUID HAZARDOUS WASTES

Waste Solvent	2 drums/quarter	55 gal/drum
Waste Oil/Hydraulic Fluid	2 drums/quarter	55 gal/drum 350 lbs/drum
Waste Fuel	4-5 Fuel Bowsers	250 gal/bowser
Waste 1,1,1 Trichlorethane	1 drum/quarter	55 gal/drum 400 lbs/drum
Waste Chlorinated Solvent	1 drum/quarter	55 gal/drum 450 lbs/drum

Source: Lockheed, 1990

#### 2.1.6 Aircraft Stripping

Under the proposed action, aircraft stripping will only be required on small areas and parts. The two methods that will be used are plastic media blasting and chemical stripping. This activity will be undertaken within the hangar. About 1500 pounds per month of plastic media will be used with an expected 90% waste recovery and reuse. The chemicals utilized are the same as currently used by the Air Force on C-141s. About 60 gallons per month of methylene chloride will be hand applied for stripping of small areas. Current Air Force use of methylene chloride is estimated to be 243 gallons per month. No new additional contaminants would be entering the atmosphere or waste stream. No significant impacts from aircraft painting are expected from either the combined Air Force/Lockheed action or the proposed Lockheed action.

#### 2.1.7 Painting

The only painting requirements associated with the proposed action will constitute minor touch-up operations. These will be undertaken in state-of-the-art spray booths. It is estimated that about 250 gallons per month of coatings will be used: 120 gallons of brightner, 120 gallons of alodine and 10 gallons of water-based paint. All coatings will meet South Coast Air Quality Management District (SCAQMD) specifications. The appropriate construction and operating permits will be obtained from the SCAQMD by IVDA or by Lockheed.

Current Air Force usage is 230 gallons per month of polyurethane paint, 35 gallons per month of lacquer paint.

There will only be minor solvent usage associated with degreasing operations of the aircraft. About 60 gallons per month of trichlorethane and 165 gallons of methyl isobutyl ketone and methyl ethyl ketone (MEK/MBK) mix will be used. All solvents used will be in compliance with SCAQMD rules and regulations. No significant impacts from aircraft painting are expected from either the combined Air Force/Lockheed action or the proposed Lockheed action.

#### 2.1.8 Check-out Operations

During the check-out operations for the type of maintenance that is being proposed by Lockheed, the FAA requires replacement of aircraft fluids. The volume of these products per month is as follows:

Engine oil	240 gallons
Hydraulic fluid	60 gallons
Grease/lubricants	15 gallons

These waste products will be collected and stored in approved containers and locations for salvage and reuse. Such wastes will not be stored for longer than 90 days. Lockheed will follow the Norton AFB Spill and Waste Recovery Plan. Current Air Force

usage is 50 gallons per month of engine oil and 25 gallons per month lubricating oil. No significant impacts are expected from these operations from either the joint or singular actions. Prior to the aircraft being placed in the hanger, all fuel will be drained from the tanks and placed in Air Force, federal, and state approved fuel bowzers. About 1,250 gallons per quarter will be collected and recycled for future use. After the maintenance operations are completed, fuel will be added to permit about 60 minutes of check out operations. These operations will be at a location acceptable to the Air Force and coordinated as required. The aircraft will then depart the airfield.

Lockheed would propose that all washrack operations be performed by a contractor currently performing the same functions for the Air Force at Norton. Aircraft washing will be conducted prior to hangar input and aircraft delivery. About 2 aircraft per month will be washed using about 60,000 gal of water and 150 gal alkaline soap.

#### 2.1.9 Solid Hazardous Wastes

Current Air Force solid hazardous waste in Hangar 763 generation is about 3,600 pounds per quarter for contaminated rags and about 130 gallons per quarter of absorbent contaminated with fuel and oil. Proposed generation of solid hazardous waste from the proposed Lockheed operations are 1,800 pounds per quarter for contaminated rags and 250 pounds per quarter of absorbent contaminated with fuel and oil. See Table 2.2. The waste plastic media will be shipped to a recycler for processing and future reuse. Waste accumulated on rags will be stored in approved containers and disposed of in accordance with State of California regulations.

No significant impacts are expected from this generation of solid or liquid hazardous waste material from either the combined or proposed action.

TABLE 2.2 SOLID HAZARDOUS WASTES

Contaminated Rags	4 drums/quarter	55 gal/drum 450 lbs/drum
Empty Hazardous Containers	3 drums/quarter	350 lbs/drum
Empty Aerosol Cans	2 drums/quarter	300 lbs/drum
Absorbent Contaminated with Fuel & Oil	1 drum/quarter	250 lbs/drum
Waste Plastic Media	3 drums/quarter	450 lbs/drum

Source: Lockheed, 1990

## 2.2 Alternatives To The Proposed Action

Hanger 763 is the only facility at Norton AFB which can accommodate 747 aircraft of the type Lockheed has proposed to maintain. This initiative is not being proposed by the Air Force, however, the Air Force does have an interest in cooperating with local reuse authorities during closure and prior to the decisions on reuse of Norton AFB. There are no other proposed interim uses before the IVDA at this time.

## 2.3 No-Action Alternative

Under the No-Action alternative, the Air Force would continue present C-141 aircraft maintenance operations in Hanger 763 at Norton AFB, CA. The relatively small number of 747 flight operations and modifications to Hanger 763 outlined above would not take place. The Air Force is committed to working cooperatively with local communities and lawfully constituted reuse committees to seek interim and long-term uses for excess government property at bases mandated for closure.

## 3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

### 3.1 Location, History and Current Mission

#### 3.1.1 Location

Norton AFB is located near the eastern end of the San Bernardino Valley in Southern California, just north of the Santa Ana River. See Figures 3.1 and 3.2 for its location. The base is about 55 miles east of Los Angeles, 60 miles west of Palm Springs, and 45 miles northeast of the Pacific Ocean (at its nearest point).

The Santa Ana River forms the south boundary with City Creek flowing along the southeast perimeter of the base. Otherwise, the base is completely surrounded by residential communities.

#### 3.1.2 History

Norton AFB was originally established as the San Bernardino Air Depot, an Army Air Force Corps facility, in 1941. The base was renamed in 1950 to honor Captain Leland F. Norton, an A-20 bomber pilot and San Bernardino native who was killed in action over France in 1944.

The 63rd MAW traces its lineage back to the 63rd Transport Group, a C-47 airlift unit formed at Wright Field, Ohio, in 1940 to provide wartime movement of defense personnel and material throughout the United States and Caribbean. In 1942, the Group became a Wing, transferred to Altus AFB, Oklahoma, and was deactivated in 1944. The Wing was reactivated in 1953, equipped with C-124s, and transferred to Donaldson AFB, South Carolina. With the closing of Donaldson AFB in 1963, the Wing moved to Hunter AFB, Georgia. When it closed in 1967, the Wing came to Norton AFB, and began flying the C-141A.

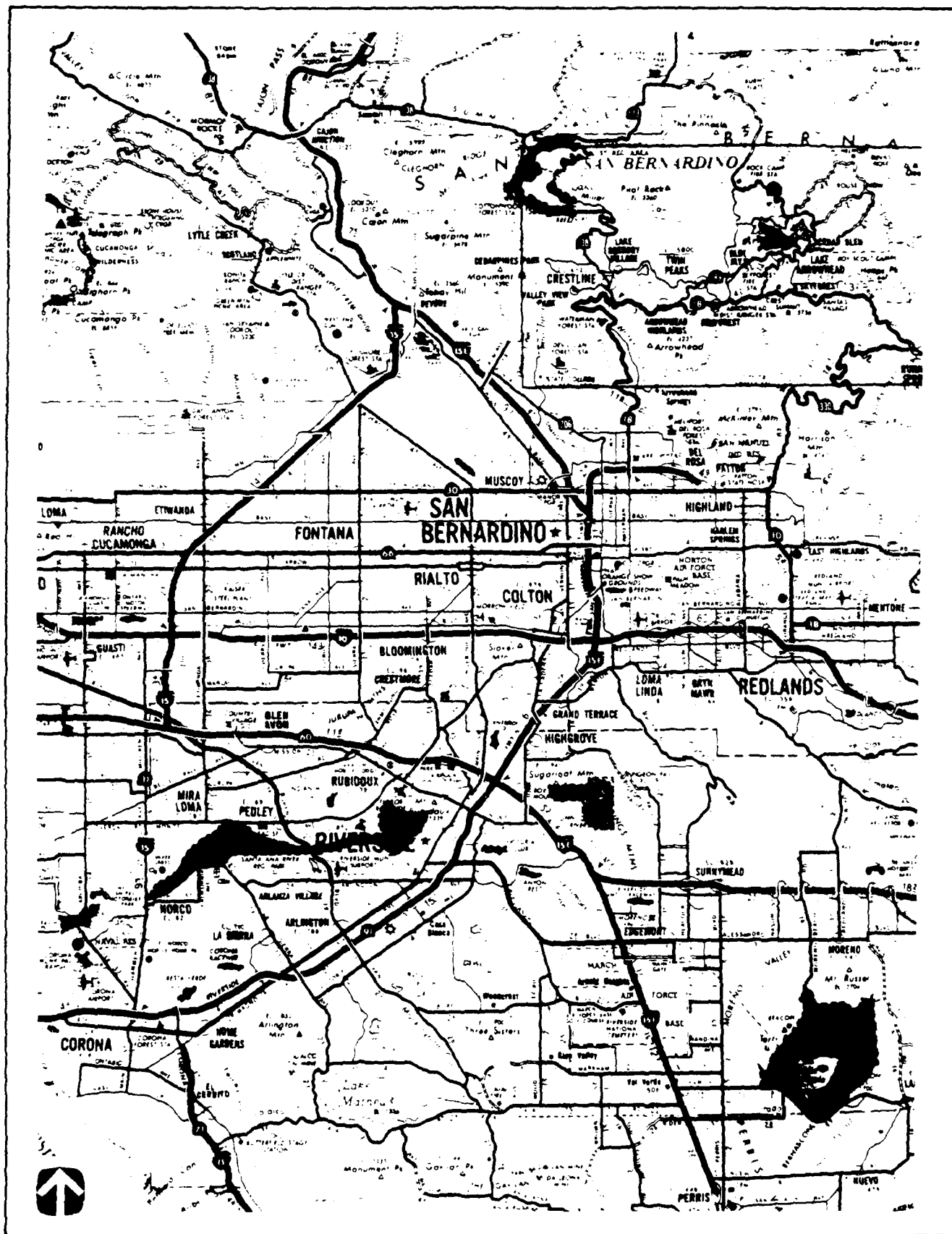
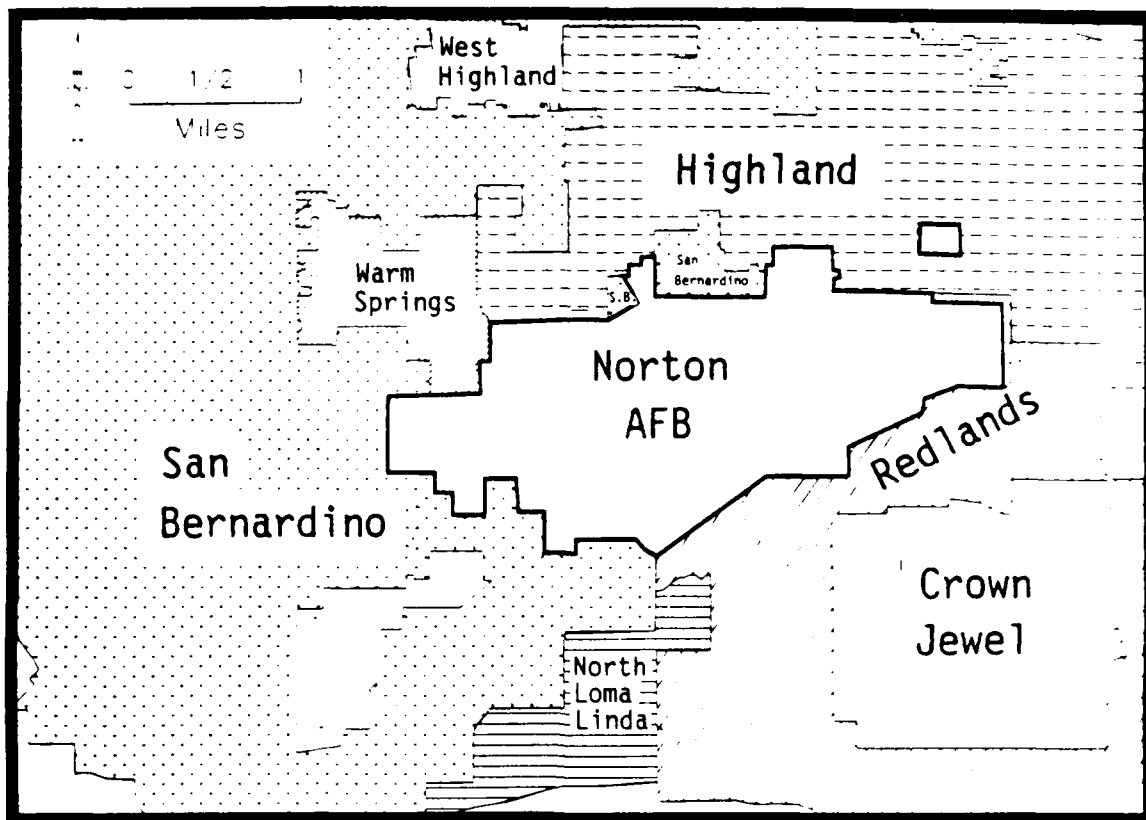


FIGURE 3.1 VICINITY MAP



Source: Adapted from Sullivan Publications, Inc. 1988.

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FIGURE 3.2 COMMUNITIES NEAR NORTON AFB, CALIFORNIA

### 3.1.3 Current Mission

The 63rd Military Airlift Wing (MAW) is the host unit at Norton AFB; its mission is to maintain an immediate airlift capability to deliver and sustain air and ground combat forces anywhere in the world. The wing also provides airlift augmentation as may be directed to Air Force components, exercises, and training programs to maintain a high state of readiness of all wing resources and assigned reserve forces. The wing is also responsible for support functions to maintain facilities at Norton AFB.

Currently, Norton AFB's primary authorized aircraft (PAA), which are being relocated, (which is the subject of a separate EIS) includes 56 cargo and operational support aircraft: 48 C-141Bs, 4 C-12Fs, and 4 C-21As. It is now planned that the 63rd Military Airlift Wing will inactivate and the 445th Military Airlift Wing will be transferred to March AFB, CA. The previously announced relocation of the 63rd to March AFB, CA, associated with the Norton AFB closure, has been cancelled and will be discussed in the separate EIS mentioned earlier.

The program management functions of the Ballistic Systems Division (BSD) may be disestablished and transferred to the Space Systems Division at Los Angeles AFB.

### 3.2 Current Aircraft Operations

#### 3.2.1 Aircraft Operations

Daily flight operations, the primary input data used to estimate noise levels, are listed in Table 3-1. Runway 06 is used for 89.5% of the operations, and Runway 30 is used for the remaining 10.5%. See Figure 2.1 for runway orientation. Transient aircraft which make up about 4.5% of the flight operations in 1987, are also listed in Table 3-1.

Norton AFB has been designated as the principal arrival and departure airport for US Army and Marine units rotating through their respective training facilities at Ft. Irwin and Twenty-nin Palms. Both commercial and Air Force aircraft are used in these transfers.

#### 3.2.2 Aircraft Maintenance

The present use of Hangar 763 is for maintenance and corrosion control activities on C-141B aircraft. This involves engine repair and some painting. The maintenance revolves around scheduled isochronal and refurbishment inspections, flightline maintenance, and in-shop component and engine repair.

Table 3.1. CURRENT AIR OPERATIONS

Aircraft Assigned	Avg. No. of Operations <sup>a</sup> per Day
C-141	102.94
C-21	9.22
C-12	9.20
Transient	
C-130	3.90
C-5A	0.92
T-37	1.08
T-38	1.86
DC-9	2.56
B-747	0.86
K/DC-10/L-1011	0.50
Business jet	0.84

<sup>a</sup> An operation is one takeoff and one landing combined.  
Source: AFESC, Tyndall AFB 1989.

Norton AFB has been designated as the principal arrival and departure airport for US Army and Marine units rotating through their respective training facilities at Ft Irwin and Twenty-Nine Palms. Both commercial and Air Force aircraft are used in these transfers.

### 3.2.3 Accident Potential Zones and Compatible Land Uses

The Air Installation Compatible Use Zone (AICUZ) program provides information on the relative potential for accidents in areas surrounding Norton AFB involving aircraft using the base. Air-Force-wide data for 658 aircraft accidents during the period 1968-1980 showed that seventy percent of the accidents occurred in areas within 1,000 ft of the side of runways or in an area 3,000 ft wide extending 15,000 beyond the end of the runway. To ensure that incompatible land uses could not occur within the clear zone, the area of greatest noise and safety hazard, the Air Force acquired property rights to the clear zone acreage. The defined accident potential zones (APZs) project the accident potential relative to other zones but do not project the probability for an accident to occur. Also, the accident statistics are for all Air Force aircraft and are not specific to Norton AFB aircraft.

Except for agriculture, fishing, or forestry activities requiring only low labor intensity, the clear zone is to remain undeveloped. (The three clear zone parcels outside the Norton AFB boundaries are covered by perpetual cut-to-ground easements, which are owned by the Air Force.) The Air Force recommends that residential development not occur in either APZ I or II. The

recommendations, however, suggest that development of other activities in APZ I and II may occur on a selected basis depending primarily on densities of structures and people. The development in the vicinity of Norton AFB includes some deviations from the APZ recommendations.

The Air Force has established criteria on height limitations of structures in areas surrounding the runway at Norton AFB. The region extends up to 9.5 mi (50,000 ft) from the ends of the runway and 8.4 mi ;(44,500 ft) laterally, in which the height of structures is limited to 500 ft or less to avoid obstructing incoming or departing aircraft.

### 3.3 Installation Environmental Management Programs

#### 3.3.1 Hazardous Wastes

As part of its various current activities, Norton AFB generates materials that have been designated as hazardous wastes under RCRA (as outlined in 40 CFR Parts 261-265) and the State of California code (22 CAC 4, Chapter 30). The State has been authorized by EPA to implement the federal program as modified by its own regulations, which are more stringent than the federal requirements. These regulations require that the hazardous wastes be handled, stored, transported, disposed of or recycled according to defined procedures. Norton AFB has incorporated these procedures in their Hazardous Waste Management Plan, which is applicable to all USAF activities.

The estimated annual quantity of these hazardous wastes generated and requiring disposal is about 21,000 gal/year, plus an additional 25,000 gal/year used petroleum products (not including quantities that are recycled or processed through the Industrial Waste Treatment Plant (IWTP). Used petroleum products are generic products regulated by California as hazardous wastes but also are regulated by specific name under Resource Conservation and Recovery Act (RCRA). Table 3.2 provides estimated quantities of hazardous wastes currently generated. Table 3.3 lists the hazardous waste accumulation points, several of which are located in Hanger 763 which is the focal point of the proposed action. The waste collection at designated accumulation points is primarily in labeled 55-gal drums. Some hazardous wastes are also collected on the flight line using mobile bowlers (trailer-mounted tank, typically having a 750-gal capacity) that have been labeled for the collection of various specific types of wastes. Additionally, some wastes are disposed of and treated through the base IWTP.

Generators of hazardous waste at Norton AFB are required to provide a complete breakdown of the contents of the hazardous waste submitted for recycling or disposal. If the waste composition is unknown, sampling and analysis is conducted by the base Bioenvironmental Engineering Services to establish the composition.

Table 3.2 Summary of Currently Generated Hazardous Wastes  
(estimated)

Hazardous Waste	Quantity Generated (gal)		
	Monthly	Quarterly	Annually
Paint Waste	515	1,545	6,180
Solvent	911	2,733	10,932
Process Chemicals	78	234	936
Alcohol	8	24	96
Vehicle antifreeze	72	216	864
Process Oil	37	111	444
Battery Acid	125	375	1,500
Used Petroleum Products <sup>a</sup>			
Fuel	33	99	396
Oil	1,235	3,705	14,820
Solvent	828	2,484	9,936

<sup>a</sup> Excludes waste processed through the IWTP

Source: 63rd ABG (1989)

Jet fuel (JP-4) that has been contaminated is also treated as hazardous waste. "Contaminated" fuel is usually contaminated with water or some other substance that makes it unsafe for use as jet fuel. However, an attempt is made to recycle JP-4 fuel waste on base as fuel for aircraft or aerospace ground equipment (AGE) or in fire training.

Wastes handled through the IWTP include liquid wastes resulting primarily from aircraft washdown. These wastes, estimated at 66,000 gal/day, are transported to the IWTP primarily through a separate collection system. Additional wastes from maintenance, electroplating, and painting are also treated. These wastes, which amount to about 200 gallons/month, are transported to the IWTP primarily in 55-gal drums by truck.

Until recently, the water effluent from the IWTP was discharged to the Santa Ana River under an National Pollutant Discharge Elimination System (NPDES) permit (No. CA0002062) issued by the California Regional Water Quality Control Board, Santa Ana Region. The IWTP now discharges to a percolation pond inside the base near the IWTP, and an application has been submitted for a Facility Permit/Waste Discharge to replace the NPDES permit.

Table 3.3 Collection Points for Hazardous Wastes

Facility	Location in Facility
341	Outside (NW, fenced area)
675	Inside at northwest corner
726	Outside at south side
763	Plating shop
763	Pneudraulics shop
763	Nondestructive inspection shop
763	Outside at southwest corner
763	Outside at southeast corner
Other	Northwest corner of fightline next to aircraft parking area D-7

Source: 63rd FMS (1989)

Most hazardous wastes collected at accumulation points are turned in to the Defense Logistic Agency's Defense Reutilization and Marketing Office (DRMO) facilities located at Norton AFB (Buildings 964 and 970). A disposal turn-in document must be prepared for all materials when they are transferred to DRMO.

DRMO has the responsibility to dispose of the hazardous wastes according to regulatory guidelines. DRMO is under an interim (Part A) permit for storage of the hazardous waste. Some hazardous waste is disposed of by Norton AFB directly through contract with approved disposal firms. Transferring the hazardous waste responsibility to off-site disposal contractors, either by the DRMO or Norton AFB, includes the preparation of manifests, copies of which must be signed and returned to the point of origin after the waste is disposed of or recycled.

In accordance with the Hazardous Waste Management Plan, each organization generating or storing hazardous waste is required to ensure that all personnel who manage hazardous materials or handle hazardous wastes receive annual training with regard to safe procedures for carrying out their responsibilities.

### 3.3.2 Solid Wastes

Nonhazardous domestic and industrial refuse generation is estimated at 2,060 tons/year. A local disposal company collects the refuse for disposal in an off-base sanitary landfill.

### 3.3.3 Waste Water

The Norton AFB sanitary sewer discharges into the San Bernardino Water Reclamation system for treatment. The discharge permit allows 1.0 million gal/day. The actual discharge as metered is 0.85-1.0 million gal/day.

#### 3.3.4 Air Emissions

Ambient air quality in the Norton AFB area is primarily influenced by the emissions from Norton AFB and its surrounding area, i.e., the South Coast Air Basin (SCAB). The SCAB includes the nondesert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County.

The major sources of emissions associated with Norton AFB include aircraft flight and maintenance operations, motor vehicle operations, boilers and furnaces, fire training exercises, painting and metal cleaning operations, aircraft engine testing, and stationary internal combustion engines.

The annual total emissions from all categories of sources associated with Norton AFB during the period 1987-1988 were about 8.0 tons/day of CO; 4.8 tons/day of reactive organic gases (ROG) (hydrocarbons that contribute to ozone formation); 1.6 tons/day of NO<sub>x</sub>; 0.25 tons/day of total suspended particulates (TSP), which includes 0.21 tons/day of particulate matter with aerodynamic diameters equal to or less than 10  $\mu$ m (PM<sub>10</sub>); 0.16 tons/day of sulfur dioxide (SO<sub>2</sub>); and 0.7 lb/day of Pb.

The significance of the emissions from the portions of San Bernardino and Riverside counties within SCAB is expressed as a percentage of the total SCAB emissions, and that of the emissions associated with Norton AFB as percentages of the emissions from San Bernardino County (SCAB portion) and SCAB. The emissions from the SCAB portion of San Bernardino and Riverside counties account for about 5% and 6% of the SCAB emissions, respectively. The emissions associated with Norton AFB account for a small fraction of the emissions produced in its surrounding area, that is, about 2.0% of the emissions from the SCAB portion of San Bernardino County and about 0.16% of the total SCAB emissions.

#### 3.3.5 Installation Restoration Program

Past activities at Norton AFB have had the potential to contribute to soil and groundwater contamination at the base. Such activities have included burial of drums and other unspecified materials at several sites in the golf course area; disposal of waste oil, solvent, paint residue, and similar substances into unlined pits, ponds, or drying beds; discharge of waste aviation fuel, oil, lubricant, and miscellaneous combustible materials during fire training exercises; storage of drums with possible leaks on unprotected surfaces; leakage from underground storage tanks containing waste oil, lubricant, and solvent; spills of aviation fuel, oil, solvent, polychlorinated biphenyls (PCBs), acidic plating solution, and similar substances onto unprotected surfaces; and burial of small quantities of low-level radioactive wastes.

These past activities resulted in Norton AFB being placed on the National Priority List (NPL) by the EPA (Federal Register, Vol. 52, p.27642, July 22, 1987). The NPL is an EPA-generated list of the sites nationwide that pose the greatest hazard to public health and thus warrant priority responses.

Under the mandate of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Superfund Amendments to Reauthorization Act (SARA) federal statutes, the Air Force is actively pursuing a program to address and, as necessary, remediate environmental concerns created by these past practices. These federal statutes define the applicability of cleanup requirements to federal facilities (CERCLA Section 120) and establish the Defense Environmental Restoration Program (DERP) with one of its specific objectives being:

The identification, investigation, research and development, and cleanup of contamination from hazardous substances, pollutants, and contaminants (SARA Section 211).

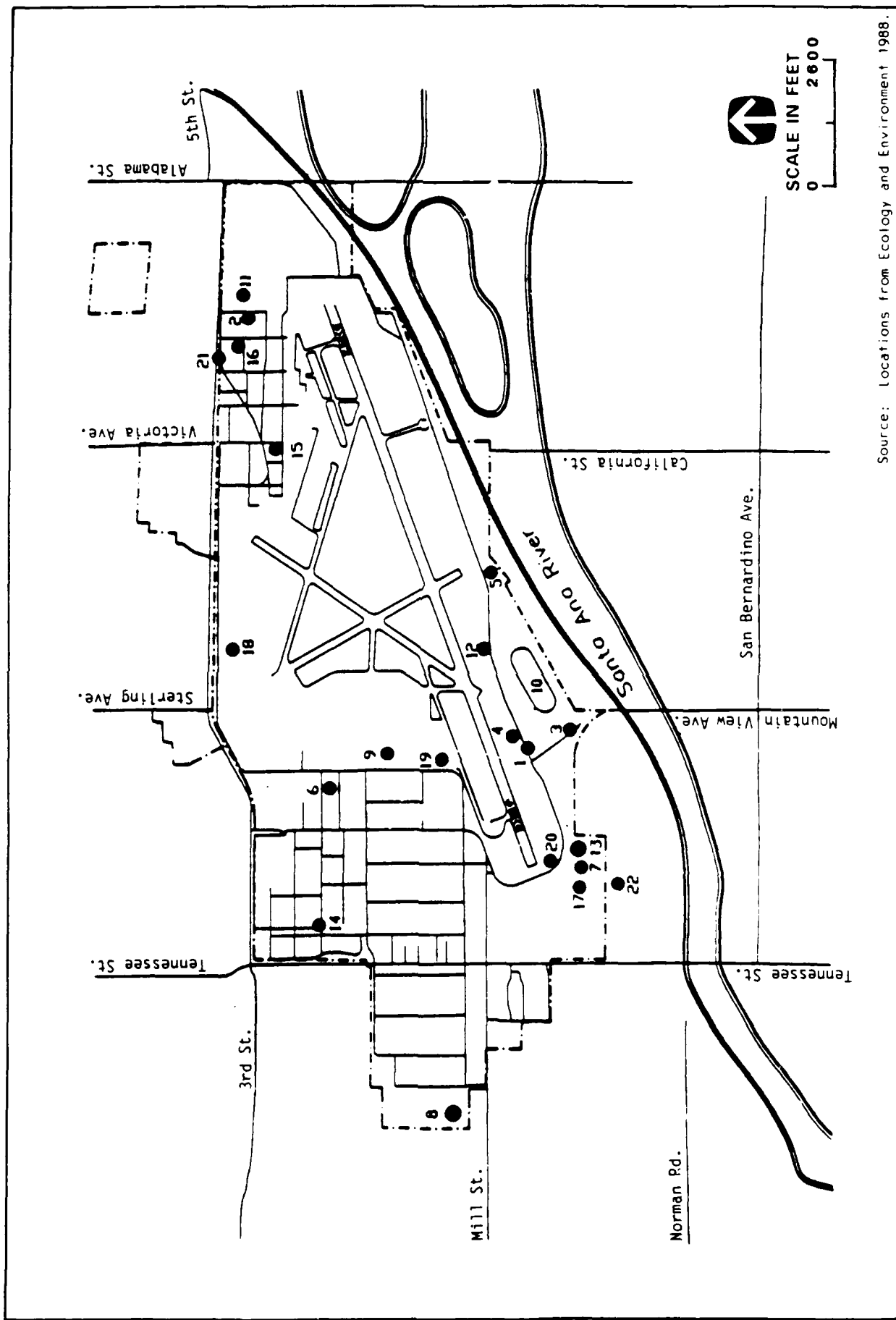
At Norton AFB, 22 sites have been identified and evaluated. See Figure 3.3 for locations. Procedures for completing the remaining IRP have been specified in a formal Interagency Agreement (IAG) among the EPA, Air Force, and California Dept of Health Services (IAG 1989). This agreement also provides schedules for setting of deadlines for completion of the IRP.

#### 3.4. Land Use

The land surrounding Norton AFB is zoned for a variety of residential, commercial, and industrial uses. The residential areas primarily consist of single-family detached dwellings in subdivisions with schools, while commercial uses are made up mostly of governmental, business, or professional buildings; medical offices or clinics; hotels; and supermarkets. Industrial uses in the area consist of storage yards, industrial plants, and motor and rail terminals. The principal communities that surround the base are Highland, Loma Linda, Redlands, and San Bernardino.

In areas to the northeast and southwest of Norton AFB, along the take-off and landing flight tracks, some residential and commercial development is incompatible with AICUZ recommendations.

The Santa Ana River forms the south boundary with City Creek flowing along the southeast perimeter of the base. Otherwise, the base is completely surrounded by residential communities. Several small ponds occur on the base, specifically within the golf course and adjacent to the Santa Ana River. These ponds are man made.



Source: Locations from Ecology and Environment 1988.

FIGURE 3.3 INSTALLATION RESTORATION PROGRAM SITES AT NORTON AFB, CALIFORNIA (SEE TABLE 3.1 FOR THE SITE NAME)

### 3.4.1 Noise

Noise levels resulting from existing aircraft operations at Norton AFB have been estimated as part of the Air Force Air Installation Compatible Use Zone (AICUZ) program. The AICUZ program is designed to provide updated information on the flight operations of the base, as well as land use compatibility guidelines, and to assist local community planning efforts in dealing with the impacts of these operations. Estimated noise levels from aircraft using Norton AFB were most recently updated in 1987.

The AICUZ program uses various types of information to estimate noise levels, including types of aircraft, flight patterns, power settings, number of flight operations, and time of day or night. This information is used in the computer model NOISEMAP 5.2. The output of this analysis is expressed in terms of the day-night average sound level (Ldn).

The Ldn value represents the adjusted 24-hour average sound level, in decibels, for the period from midnight to midnight. The adjustment involves addition of 10 dB to sound levels occurring during the night (from 2200 to 0700 hours) to account for increased sensitivity to noise during normal sleeping hours. Single event level (SEL) are included within these studies and are computed as part of the Ldn values. SEL values for the Pratt/Whitney TS-33-P78 engine used in C-141B aircraft located at Norton AFB is 105.8 dBA. The EPA has adopted Ldn as the standard measure for estimating noise impacts.

The municipalities surrounding Norton AFB regularly submit zoning proposals to the Norton AFB community planning office for review. Recommendations on zoning that are compatible with noise guidelines are then provided to municipalities by Norton AFB. This process has successfully avoided most major conflicts with noise level zoning constraints. Some residential and commercial development has occurred within the 65- to 75-dB contours. See Figure 3-4 for current noise contours.

### 3.5 Air Quality

#### 3.5.1 Regional Air Quality

The potential for episodes of high air-pollutant concentrations in the San Bernardino Valley is substantially influenced by the meteorological conditions of the area and the emissions of precursor pollutants from the surrounding air basin. Westerly breezes prevail during the summer months with large quantities of precursor emissions from the coastal section of southern California are transported into the area, and with strong isolation, maximum amounts of photochemical smogs are produced. Conversely, with the easterly breezes which prevail during the winter months, the Valley becomes the source, rather than the receptor of pollutants in the coastal areas.

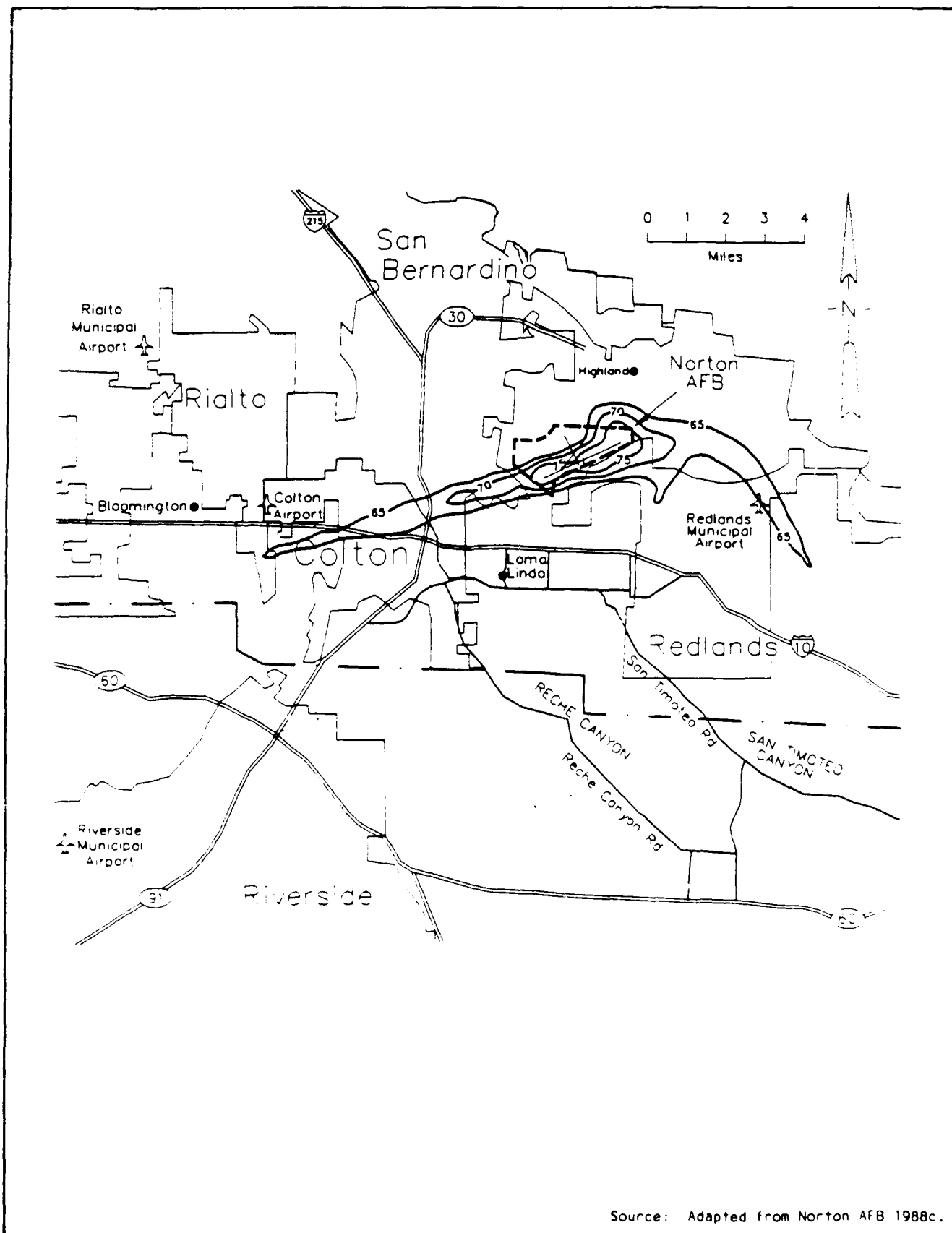


FIGURE 3.4 ESTIMATED NOISE ISOPLETH (Ldn) FROM AIRCRAFT USING  
NORTON AFB, CALIFORNIA

### 3.5.2 Air Quality Monitoring

Ambient air quality is not monitored within the boundary of Norton AFB. The nearest air quality monitoring stations are located in the cities of San Bernardino (about 3.7 miles northwest), Redlands (about 5.6 miles southeast), and Riverside (about 12.3 miles southwest).

### 3.5.3. Attainment Status

The greatest air quality problem in the vicinity of Norton AFB, as well as in the entire SCAB, is ozone. The SCAB portion of San Bernardino County, which includes Norton AFB, is currently designated as in attainment for the NAAQS for SO<sub>2</sub> but nonattainment for ozone, CO, NO<sub>2</sub>, and TSP (which includes PM<sub>10</sub>) (40 CFR 81.305). Although not formally identified as such, this area is in attainment for Pb, but in nonattainment for PM<sub>10</sub> (Goldberg 1989). The area's designation under the CAAQS has recently been adopted by CARB. The designations are in attainment for CO, SO<sub>2</sub>, and Pb; in nonattainment for ozone, NO<sub>2</sub>, PM<sub>10</sub>, and SO<sub>4</sub>; and unclassified for hydrogen sulfide and visibility-reducing particles (Range 1989). (The California Ambient Air Quality Standards (CAAQS) are, in general more stringent than the national standards.)

### 3.5.4 Air Pollutant Emissions

In contrast to ozone and PM<sub>10</sub>, the levels of other air pollutants are relatively low. The CAAQS and NAAQS for CO, NO<sub>2</sub>, SO<sub>2</sub>, and Pb have not been exceeded during the last five years (CARB 1984-1988). The California SO<sub>4</sub> standard was also not exceeded during the same period.

Current data indicates that the ambient levels of ozone, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and SO<sub>4</sub> in the vicinity of Norton AFB did not show any significant increasing or decreasing trends during the last five years. The only air pollutant with a definite downward trend during the last five years is Pb. In addition, the air quality trends for the three stations discussed, which are located on different sides of Norton AFB, are similar, leading to the conclusion that the air quality patterns are similar throughout the Norton AFB area.

All permitted sources (40) are currently in compliance with the district's stack testing and other permit requirements. In addition, 37 permit applications for various emission sources are currently pending.

## 3.6 Geology and Topography

Norton AFB is located on a vast apron of Pleistocene and Recent alluvium more than 1,000 ft thick, derived from the igneous and metamorphic complex exposed in the San Bernardino Mountains to the north and east. Granitic and gneissic rocks are the most

common types in the alluvium at Norton AFB. The Santa Ana River Wash, which forms the southern boundary of the base, is the largest drainage from the mountains. The channel of City Creek Diversion is located along the northern boundary of the base.

The soils at Norton AFB to a depth of 60 in. are classified primarily as belonging to the Tujunga-Soboba Association. Tujunga soils, which comprise the majority of the Norton AFB soils, are somewhat excessively drained and have a surface layer of brown, slightly acidic loamy sand that is gravelly in places. Below this is pale-brown, slightly acidic coarse sand. Soboba soils, which are found in the southeast portions of the base along the Santa Ana Wash, are excessively drained and have a surface layer of grayish-brown, slightly acidic, stony or gravelly loamy sand. Below this is brown, slightly acidic, very stony loamy sand and very pale brown, neutral, very stony sand. The soils of this association are used mainly for irrigated crops, dryland crops, and limited grazing. There are no agricultural activities on the base.

The soils of the Tujunga-Soboba Association are also used as a source of sand, gravel, and road fill. Several sand and gravel mining operations are located along the Santa Ana River bed near the base. Sand and gravel are the only mineral resources in the vicinity of the base.

### 3.7 Water Resources

#### 3.7.1 Groundwater

Norton AFB is located within the 110 sq. mile Bunker Hill groundwater basin. This basin is recharged predominantly by runoff from the San Bernardino Mountains. However, the San Bernardino Municipal Water District does spread supplemental water acquired from the Feather River Project in basins just west of Green Spot Road for groundwater recharge. Recharge also occurs by groundwater inflow from the San Timoteo Basin to the southeast and by penetration of surface water. The general groundwater flow direction is from northeast to southwest.

In the vicinity of Norton AFB, the combined middle and lower water-bearing zones and lower confining member function as a single aquifer beginning at a depth of about 650 ft and extending below that for 500-700 ft. This aquifer serves as the source of groundwater extracted for use on the base and in the surrounding communities. The current annual water consumption by Norton AFB is estimated as 840 million gal per year produced by on-site wells for use by the base units. An additional 50 million gal per year is purchased from surrounding communities for use by base housing.

### 3.7.2 Surface Water

Three stream channels are located in the vicinity of Norton AFB. The westward-flowing Santa Ana River adjoins the base along its southern boundary. City Creek to the north and east of the base joins the Santa Ana River at about the southeast corner of the base. Partial flows from City Creek are diverted into an earth channel parallel to Third Street, which along with a minor unnamed tributary to its west, flows westward into the third stream channel, Warm Creek. The surface streams in this area are normally dry and convey water only during or immediately after heavy regional precipitation.

Controlled storm water drainage of the land area on Norton AFB generally consists of surface flow to diversion structures and then through collection pipes to local surface streams. There are 11 points for stormwater discharge around the boundary of the base. The point discharge that includes stormwater runoff from aircraft parking, maintenance, and servicing areas is regulated under National Pollutant Discharge System (NPDES) permit CA0002071. The point stormwater discharge that also previously included the IWP discharge is regulated under NPDES permit CA0002062.

### 3.8 Biological Resources

#### 3.8.1 Vegetation

Norton AFB lies with the Californian Chaparral complex. The natural vegetation within this complex is typically dominated by foxtail and chamise, intermingled with wild oats, manzanita, ceanothus, and scrub oak. However, the vegetation at Norton AFB has been altered by past and ongoing construction, maintenance, and operational activities. Most of the vegetated areas are mowed and actively landscaped: little or no natural habitat remains. Landscaping on base includes a variety of shrubs and trees such as oleander, elm, mulberry, eucalyptus, Mexican fan palm, and California oak.

#### 3.8.2 Wildlife

Mammals common to the habitat at Norton AFB include desert cottontailed rabbit, blacktailed rabbit, pocket gopher, ground squirrel, weasel, and deer mouse. Common bird species are meadowlark, gull, raven, crow, and starling. Reptiles that may be found on the base include rattlesnakes and horned lizards. Several small ponds associated with the golf course, exist on the base; mallards, pintails, and coots have been observed using them.

The Santa Ana River lies along Norton AFB's south and southeastern boundary; hence, part of the Santa Ana River floodway encroaches onto the southeastern portion of the base. Because the flow of the Santa Ana River is intermittent, fish and amphibians are not found in the area near Norton AFB.

### 3.8.3 Threatened, Endangered and Special Interest Species

The only federally listed threatened or endangered animal species known to occur near Norton AFB is Bell's vireo (*Vireo bellii*) (U.S. Fish and Wildlife Service (FWS)). Bell's vireo is listed as an endangered species by both the FWS and the state of California. This bird typically inhabits thickets, wood margins, and mesquite and may incidentally occur at the base.

One federally listed endangered plant that is known to occur in the floodplain of the Santa Ana River at Norton AFB is the Santa Ana River wooly-star (*Eriastrum densifolium sanctorum*). In addition, the endangered slender-horned spineflower (*Centrostegia leptoceras*) may also occur on site.

Four candidate species (as defined by FWS Category 2) may also occasionally occur at Norton AFB: the spotted bat (*Euderma maculatum*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), orange-throated whiptail (*Cnemidophorus hyerythrus*), and greenest tiger beetle (*Cincindela tranquebarica viridissima*). However, exact locations of these species' habitats have not been determined. HQ MAC (Military Airlift Command, the host command at Norton AFB) is arranging for an FWS survey, to take place in spring/summer 1990. (A Category 2 species is one that existing information indicates may warrant listing but for which substantial biological information to support listing is lacking in the area.)

### 3.8.4 Floodplains/Wetlands

The Santa Ana River lies along Norton AFB's south and southeastern boundary; hence, part of the Santa Ana River floodway encroaches onto the southeastern portion of the base. No wetlands exist on the base.

## 3.9 Socioeconomics

### 3.9.1 Region of Influence

Since Norton AFB is geographically located near the border between San Bernardino and Riverside counties, it is necessary to consider both counties in the region of influence. Many Norton AFB employees live in Riverside County, and much of the economic activity associated with Norton AFB "leaks" into Riverside. Thus, the following economic baseline analysis examines San Bernardino County alone and both counties combined.

### 3.9.2 Demographics

The total population in the two-county study area was reported as over 2 million people at the beginning of 1987: 1,139,100 in San Bernardino and 862,000 in Riverside. According to the US Department of Commerce (DOC 1988), the study area contains about 725,000 households and the average per capita income is \$12,141.

### 3.9.3 Employment

Data on the growth rates for the major economic sectors in San Bernardino County and the combined counties of San Bernardino and Riverside indicate that construction, manufacturing, and financial services have had the most steady growth in these counties during the period 1983-1987 (DOC 1989). The only sectors showing continuous decreases in activity are mining and farm production. The federal military jobs sector has experienced a very small amount of growth in recent years, both in San Bernardino County and the two-county area.

### 3.9.4 Public Services

Southern California Gas Company supplies the base via a number of distribution lines. The present base use 453,382 MBtu's. The utility has surplus capacity which can be supplied on call.

Southern California Edison Company supplies above-ground power. This 34,500 volt line originates at Edison's Substation E facility at the corner of "C" and Tippecanoe. Under present conditions, the base power use is 76,735.7 M kw/month. The Southern California Edison has surplus capacity.

Norton AFB is connected to the City of San Bernardino Regional Sewer Plant. The regional plant has a capacity of 40 Mgd. Current flow rate is 26.0 Mgd. The Norton AFB sanitary sewer discharges into the San Bernardino Water Reclamation Department system for treatment. The Norton AFB discharge permit allows 1.0 million gal/day; the actual discharge as metered is 0.85-1.0 million gal/day (Watson 1989).

### 3.9.5 Transportation

In southern California, surface travel is mostly by highway; there is no commuter rail system. The main highways serving Norton and March AFBs are Interstates 10, 15, and 215 and State Routes 30, 60, and 91. Various segments of the roads in Riverside and San Bernardino counties are characterized by traffic volumes that exceed the design volume. Data show that more than two-thirds of the base's employees live in the San Bernardino, Redlands, or Highland areas or on base.

A recent survey by Commuter Transportation Services (CTS 1989) found that more than 75% of the employees of Norton AFB live within 10 miles of the base and that the average commuting time for about 80% of the employees is 20 minutes or less. This study also indicated that 85% prefer to drive alone. Only 9% of the employees choose to car pool, and a negligible portion of the employees commute by public transportation or other modes. The incentives offered to encourage ride-sharing are few and relatively conservative. Based on the South Coast Air Quality Management District calculation, the average vehicle ridership of Norton employees is 1.06.

### 3.9.6 Recreation

The armed forces have always had a commitment to developing recreational and support facilities on their bases; Norton AFB is no exception. On-site support services include a library branch, financial management branch, barber shop, catering service, ticket and tour office, air/crafts sales shop, thrift shop, golf course, and child development center.

There is a complete range of existing recreational facilities that can be found outside the base, including a state urban recreational area, community parks, public golf courses and swimming pools, and museums.

### 3.9.7 Services for Military Retirees

About 10,074 military retirees live within 50 miles of Norton AFB. They rely on the base for health, financial, shopping, and recreational services. Civilian retirees have the option to use morale, welfare, and recreation facilities.

### 3.10 Archaeological, Cultural, and Historic Resources

HQ MAC has had a long-standing agreement with the National Park Services (NPS), under which the NPS provides technical advice. MAC received the NPS management recommendations for Norton AFB prior to the announcement regarding closure; MAC has asked the NPS to reevaluate its recommendations (for surveys, etc.) so that they reflect the effects of closure. As soon as those recommendations are available, MAC will use them as a basis for a formal consultation with the SHPO.

Based on the NPS recommendations to date, MAC expects to accomplish a survey of historic archaeological sites, with a lesser possibility of a prehistoric survey. Because of the NPS concerns regarding the potential significance of the World War II facilities on Norton AFB, these facilities are being evaluated under an ongoing DOD study. The study is being accomplished in accordance with a programmatic memorandum of agreement (PMOA) between the Advisory Council on Historic Preservation, National Council of State Historic Preservation Officers, and DOD.

A search of archaeological records for Norton AFB disclosed a survey, by non-Air Force sources, of part of the base. That survey revealed four historical archaeological sites located in the refuse disposal area (Ross 1989). In addition, further investigation is pending for four other sites; however, historical maps suggest that 21 other archaeological sites may be located on the base. Subsequent Air Force sponsored investigations will determine whether any sites are significant enough to be on the National Register of Historic Places.

#### 4.0 ENVIRONMENTAL CONSEQUENCES

##### 4.1 Land

Under present Air Force operations, the general base land use is heavy industrial related to aircraft maintenance operations. The proposed action is in keeping with the present land use. No impacts are expected.

The proposed action does not require any disturbance of land on or off the base. Neither will the proposed action affect land uses off base.

##### 4.1.1 Noise

The type of aircraft that currently utilize Norton AFB generate noise values of about 75 Ldn along the south property line. These values include single event level of 105.8 dBA at 1,000 feet generated by the Pratt Whitney TS-33-P78 engine found in the C-141B aircraft. The proposed action will utilize 747 type aircraft which have a newer type JT9D-7, 7A, 7F or 7J engine and generate about 102.5 dBA single event level values at 1,000 feet. These lower values, combined with the anticipated 2 to 3 flights per month, will not cause an increase in the 75 Ldn values found along the southern base boundary. The proposed action will not cause any significant impacts.

##### 4.2 Air Quality

Air pollutants that will be emitted to the air will come from motor vehicles, aircraft operations, aircraft stripping and painting.

##### 4.2.1 Motor Vehicles

There are presently 21,000 motor vehicles which are registered for access to Norton AFB. Utilizing AFP 19-15, Table 3-6, it is estimated that these vehicles generate about 700 tons of pollutants each year. The proposed action at maximum operations will utilize about 970 workers. Assuming that each worker drives his/her own vehicle to his job, about 4.5 tons per year of pollutants will be generated. When combined with the existing emissions, no significant impacts are expected. The 4.5 tons per year of pollutants caused by this action are expected to cause only a negligible impact to air quality.

##### 4.2.2 Aircraft Operations

Under present flying operations, Norton AFB handles about 3,274 flights per month involving 4-engine aircraft, specifically the military version of the 747 aircraft make up 26 monthly take-offs and landings of these totals. These flights emit about 110 tons per month of pollutants mainly hydrocarbons, carbon monoxide and nitrous oxide. During maximum service operations caused by this action, about 3 flights per month will be generated. This will cause about .35 tons per month of pollutants to be dispersed into

the atmosphere. The 747 flights, when added to existing emissions, are not expected to cause a significant impact. Based on these figures, negligible impacts would be expected. However, IVDA or Lockheed will obtain air pollution credits to offset emissions resulting from the proposed action.

#### 4.2.3 Aircraft Stripping

Stripping paint from airplanes under the proposed action will consume approximately 60 gallons per month of methylene chloride. Some of that will evaporate and be released into the atmosphere. Current Air Force use of methylene chloride for aircraft paint stripping at Norton AFB is estimated to be 243 gallons per month. No new contaminants would be entering the atmosphere or waste streams. The paint stripping operations will be conducted in accordance with SCAQMD regulations and permits and no significant impacts are expected.

#### 4.2.4 Aircraft Painting

Aircraft painting under the proposed action would consist of minor touch-up operations. It is estimated that about 250 gallons of coatings (120 gallons of brightner, 120 gallons of alodine and 10 gallons of water-based paint) will be used per month. All of those coatings meet the SCAQMD requirements and will be applied in state-of-the art spray booths. Degreasing preparatory to painting would involve the use of approximately 225 gallons of solvents (60 gallons of trichlorethane and 165 gallons of methy ethyl ketone/methyl isobutyl ketone (MEK/MBK) mixture). All solvents will be used in compliance with SCAQMD regulations and permits. No significant impacts are expected from the painting/degreasing operations.

#### 4.3 Geology and Topography

Since the proposed action will utilize structures and taxiways already in existence, no impacts to geology or soils through construction are expected.

#### 4.4 Water Resources

##### 4.4.1 Surface Water

Since the present facility and adjoining complex were designed to conduct surface water to existing storm drain system and this drainage pattern will not be altered, no impacts to surface water are expected.

##### 4.4.2 Ground Water

Currently, the activities at Norton Air Force Base (AFB) use about 890 million gallons per year. Estimated use by this action at maximum operations is 6 million gallons per year. Based on the current use and the existing water supply available in the aquifer, this action would have no significant impact on ground water supply when added to the present pumping rate. In and by itself, negligible impacts are expected.

#### 4.5 Biological Resources

##### 4.5.1 Vegetation

At present, there are only small areas of grass-type vegetation adjacent to the project area. The proposed action will not affect existing vegetation.

##### 4.5.2 Wildlife

There is no detectable wildlife in the project area. The proposed action will not affect existing vegetation.

##### 4.5.3 Threatened and Endangered Species

The proposed action is not expected to affect any endangered species that may be on Norton AFB. Only the Santa Ana woolly-star is known to occur within the floodway of the Santa Ana River near Norton AFB about 2500 feet south of the hangar. The other federally listed endangered species, slender-horned spineflower and least Bell's vireo, may also exist on the base in association with the Santa Ana River floodway. The survey to determine if protected species are present on Norton AFB will be conducted next spring/summer by the FWS; in the interim, there is no expectation of harm to protected species because use of hanger 763 will not alter or disturb the area associated within the Santa Ana floodway and its environs.

As for the four candidate species that may occur on base, no impacts are expected.

##### 4.5.4 Floodplains/Wetlands

No wetlands exist on Norton AFB. The proposed action will not impact the Santa Ana River floodway (approximately 2500 feet south of Hanger 763).

#### 4.6 Hazardous Wastes

Based on the discussions contained in Sections 2.1.5 and 2.1.9 of the proposed action, the small quantities of hazardous wastes generated and handled in accordance with applicable regulations will not produce significant environmental impacts.

#### 4.7 Construction

Based on discussions contained in Section 2.1.2, construction associated with the proposed action, and Section 2.1.5, which discusses wastes generated from the construction activities, it can be concluded that the small amount of construction conducted in accordance with applicable regulations and procedures will not produce significant environmental impacts.

#### 4.8 Socioeconomics

The present Air Force work force within hanger 763 is composed of about 800 workers, 600 military and 200 civilian, who live and shop in the immediate area.

##### 4.8.1 Region of Influence

The region of influence is the same as that described in Section 3.9.1.

##### 4.8.2 Demographics

The local market place has a surplus of trained workers who will be available for employment by the proposed action. It is assumed that most of the workforce already lives in the area. Approximately 150 personnel and their families would migrate into the area due to the proposed action.

##### 4.8.3 Employment

The proposed construction will utilize about 15 construction workers during the alteration operations, scheduled to start in late June 1990. During add-alter operations, a gradual buildup to about 50 construction workers is expected.

It is projected that Lockheed could process 24 to 36 aircraft per year through bays 3 and 4. Based on the outlined work scope and on industry practice, it is estimated that each wide body aircraft could generate up to 70,000 labor hours (35,000 for the Section 41 work and 35,000 for "D" check and interior refurbishment work.) Some aircraft will generate more labor hours and others generate less. Based on the projected hours generated, Lockheed at the end of the first year of operation could employ a workforce of approximately 630 individuals, including 490 highly skilled aircraft technicians and 140 management and airport personnel. The proposed payroll is \$20 million.

The Lockheed maintenance work force will arrive in late October 1990 with about 350 people doing preparation work prior to arrival of the first 747 aircraft scheduled to arrive in early November 1990. Starting in January 1991, the work force will increase until about 625 people are employed for normal operations in docks 3 and 4.

##### 4.8.4 Public Services

During joint use, these demands are expected to increase slightly; after Norton AFB closes demands would decrease to approximately 117 kw per day for power, 24,000 gallons per day for water, 12,000 gallons per day for sanitary wastes, and 50 pounds per day for solid wastes. Based upon these values even when added to existing numbers, no significant impacts are expected.

#### 4.8.5 Education

The proposed action could generate about 400 children who would range from grade 1 through grade 12. Discussions with San Bernardino and Redlands School Districts indicate no significant adverse impacts are expected.

#### 4.8.6 Transportation

Materials required for construction and debris removal should not exceed two truck loads per week for the period from June to mid-October 1990. Since the peak vehicle count entering the base is 1,000 vehicles per hour, no impact is expected from this minimal construction activity.

Under present schedules, three shifts will be utilized with typical work force breakdowns being 350 workers during the 7:00-4:00 day shift, 200 workers during the 4:00-11:00 swing shift, and 75 workers during the 11:00-7:00 graveyard shift. Based upon the total volume of present traffic, the additional number of vehicle used will not generate significant adverse impacts. The use of the vehicles generated by the proposed Lockheed proposal are expected to cause only negligible impacts.

This workforce will obtain base permits from the security police which will permit them to drive their private motor vehicles onto Norton AFB. The Lockheed staff will be provided special security badges which will permit them to be regarded as authorized personnel. They will not be permitted to use any Norton AFB facilities unless they are retired military.

#### 4.9 Archaeological, Historical, and Cultural Resources

The proposed action will utilize an existing structure with only minor modifications. During the base construction work which was accomplished in the early 1950s, extensive grading was undertaken in this area. Any existing cultural artifacts would have been significantly disturbed or destroyed. There are presently no plans to excavate below the bottom of the 24" concrete floor into native material. Based on the past history of this area it is doubtful that any significant artifacts would be found within this river wash material. No impacts are expected.

## 5.0 LIST OF PERSONS CONTACTED

Richard Bennecke	63 MAW/CARE
Lt Col Lynn Nelson	63 MAW/CARE
Lt Mark Wright	63 CES/DEV
Gary Dillard	Lockheed ASC
Paul Lynch	Lockheed ASC
Lt Col Dan G. Driggs	63 MAW/SE
Lt Col Rich Brychey	63 MAW/MA
Maj George H. Ledbetter	AFRCE-BMS/DES
Jay W. McCain	AFRCE-BMS/DES
Lt Col William L. Root	63 CES/CC
Hugh Marse	Lockheed
Kevin T. Brady	Lockheed
George Abreau	"
John Sollid	AFRCE-BMS/DEPV
Lt Col Larry Root	63 CES/CC
Maj Doug Acklin (Preparer)	HQ USAF/PRPJ
Dr John R. Sabol (Preparer)	AFRCE-BMS/DLPV

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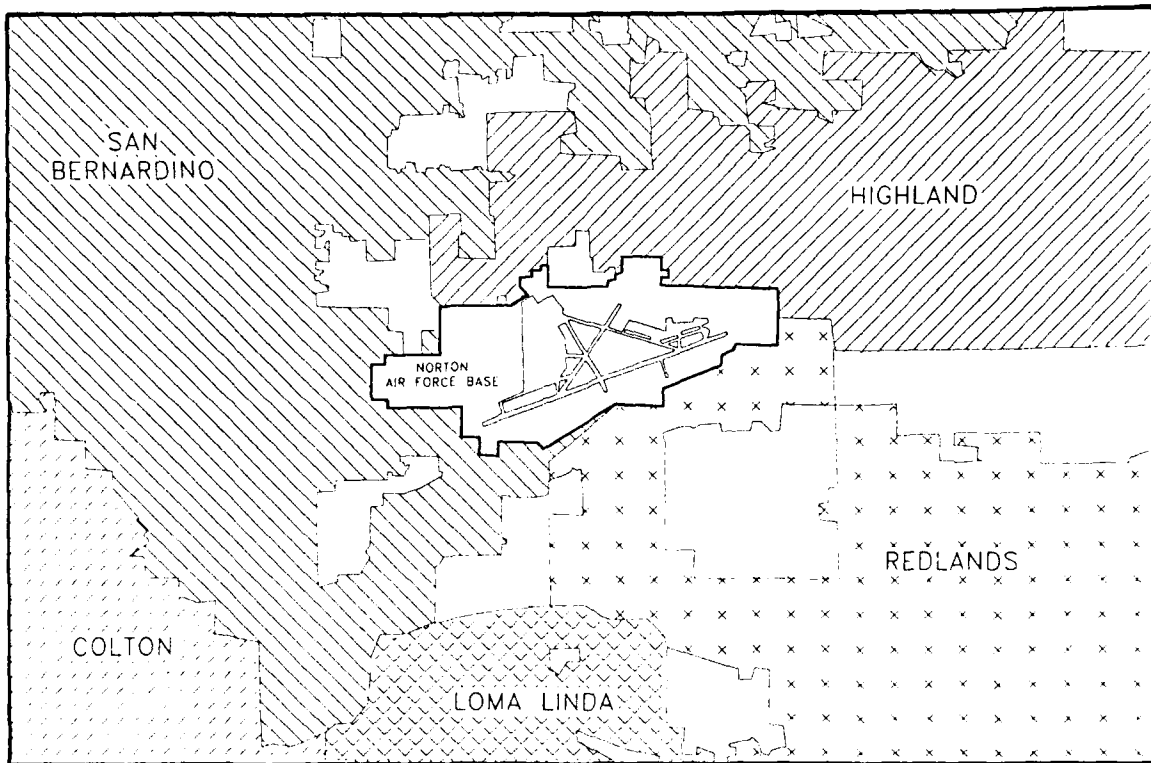
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**FIGURE 1.3 Communities near Norton Air Force Base (Revised) (Source: Adapted from County of San Bernadino Geographic Information Management System, 1989)**

agencies; the letter indicated that a scoping meeting for agencies would be held in the morning on March 8, 1989. Written comments were also solicited from the public in regard to the base closure. The official comment period was from February 17 until April 7, 1989; however, letters received after that date were also considered in determining the scope of this FEIS.

Scoping comments focused primarily on environmental issues related to the second EIS. The primary issue centered on toxic and hazardous waste currently buried on site. The reuse of the base was brought up by several people, as was air quality related to base operation and commuting. The presence of nearby municipal wells caused some concern related to contaminated soil and groundwater. Sewage treatment on base was also indicated as an issue in reference to reuse. All of these topics will be examined in depth in the reuse EIS.

Comments related to the closure actions addressed in this FEIS dealt with some aspects of the issues discussed above and included questions or concerns about how the hazardous waste management program would be staffed during the closure activities. The adequacy of waste management plans was also brought up as an issue. The concern was expressed that, with the closure of the base, waste cleanup programs may suffer

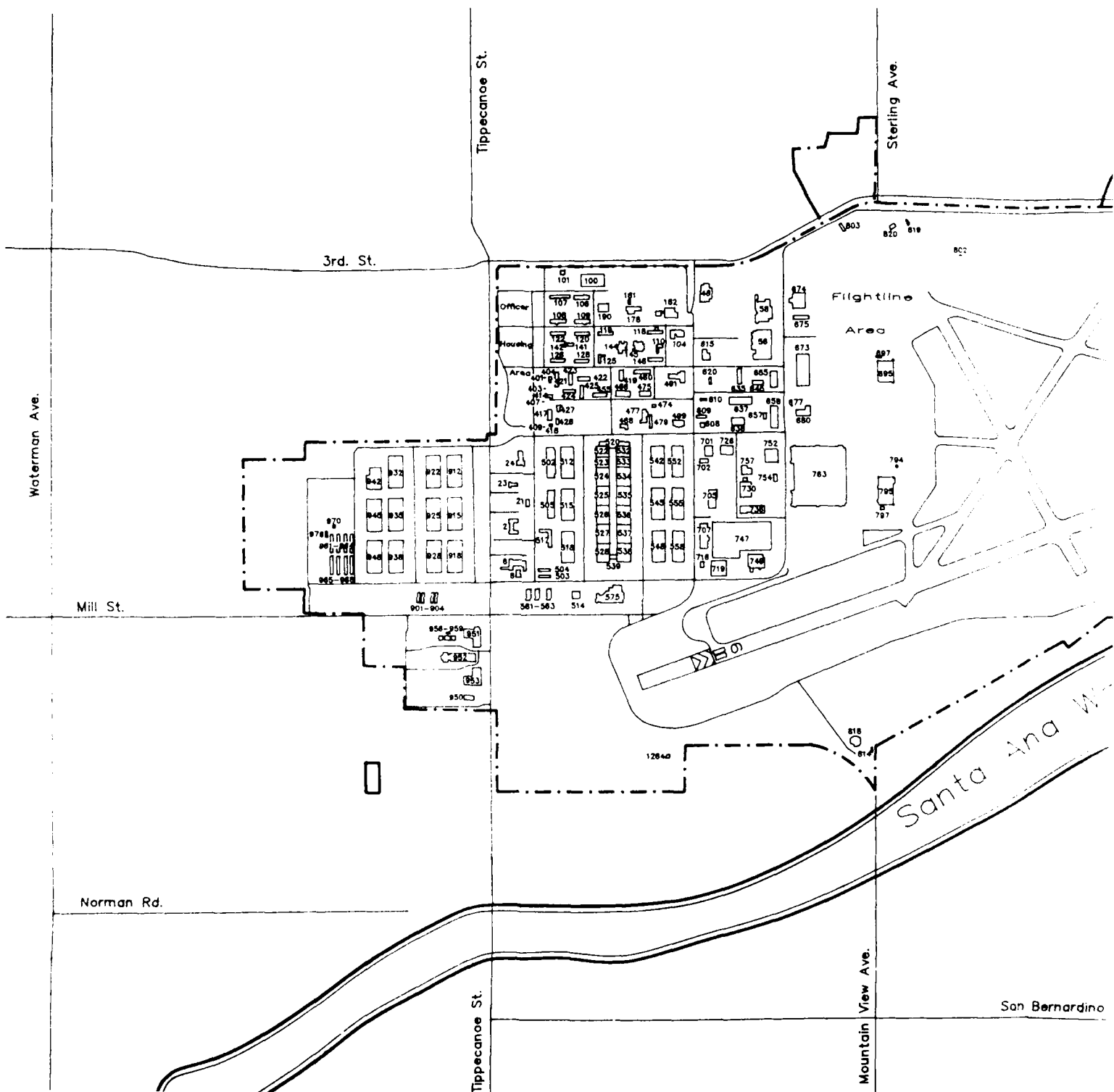


FIGURE 1.4 Site Plan for Norton Air Force Base (Source: Adapted from Norton AFB 1988b)

